University of Alberta

International protection of non-original databases: justifications, costs, alternatives, and implications for developing countries

by

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Abstract

The *sui generis* rights protection of non-original databases is a new form of Intellectual Property protection that is based solely on the time and investment of the database makers.

The need for this type of protection is not supported by any convincing evidence. Major IP theories (Locke's labor, social production, and utilitarian) do not provide a solid theoretical basis for the justification of *sui generis* rights protection. The practice of implementation of the new right in Europe shows no significant changes in the pattern of the database market. The needs of producers of non-original databases to protect their products can be met by a combination of technical means and legal tools within the existing legal framework.

The implications of the *sui generis* rights regime include jeopardy of basic scientific research, elimination of competition in the markets for value-added products and, most importantly, the *de facto* monopolization of data.

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Chapter 1

Introduction

The importance of information in contemporary society is constantly growing. While modern economies rely heavily on their capacity to generate, process, and apply information and data, databases have become important tools for dealing with information. In the broadest sense, a database can be defined as a compilation of data or other material,[1] which arranges its content in a manner that is convenient for various purposes and users. Encyclopedias, anthologies, phone books, and real estate listings are all examples of different databases. Compilations of works or other material have always been an important component of the economies world-wide.[2]

The increased importance of databases raises the issue of their proper legal protection. Databases are protected by copyright if they are original. The World Trade Organization's (WTO) *Agreement on Trade-Related Aspects of Intellectual Property Rights* (*TRIPS*), World Intellectual Property Organization (WIPO) *Copyright Treaty* (*WCT*) and *Berne Convention for the Protection of Literary and Artistic Works* (*Berne Convention*) define databases as original if "by reason of the selection or arrangement of their contents [they] constitute intellectual creations."[3] Original databases' copyright protection is well-established and harmonized through three main treaties mentioned

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[1] *WIPO Copyright Treaty*, 20 December 1996, S. Treaty Doc. No. 105-17, 36 ILM 65, CRNR/DC/94, (entered into force on March 6, 2002) [*WCT*], Article 5; *Agreement on Trade-Related Aspects of Intellectual Property Rights*, 15 April 1994, 33 ILM 81, (entered into force1 January 1995) [*TRIPS*], Article 10.2.

[2] EC, "The legal Protection of databases" (Working Paper submitted by the EC and its Member States to the WIPO Standing Committee on Copyright and Related Rights at the 8th session at Geneva, 4 November 2002), SCCR/8/8 at 2 online: WIPO <http://www.wipo.int/edocs/mdocs/copyright/en/sccr_8/sccr_8_8.pdf>.

[3] *TRIPS*, *supra* note 1, Article 10.2, *WCT*, Article 5, *Berne Convention for the Protection of Literary and Artistic Works*, 9 September 1886, 331 UNTS 217 (last amended on 28 September 1979) Article 2.5 [*Berne Convention*].

above: *Berne Convention*,[4] *TRIPS*,[5] and *WCT*.[6] National laws and regional treaties also legally protect original databases. For example, Decision 351 of the Cartagena Agreement of December 17, 1993 on Copyright and Neighboring Rights[7] (Cartagena Agreement) between Bolivia, Colombia, Ecuador, Peru and Venezuela provides that the Member Countries are obliged to protect "anthologies or compilations of assorted works and also databases, which, by the selection and arrangement of their contents, constitute personal creations."[8] The North American Free Trade Agreement between the Government of Canada, the Government of the United Mexican States and the Government of the United States of America[9] (NAFTA) obliges the parties to protect "compilations of data or other material, whether in machine readable or other form, which by reason of the selection or arrangement of their contents constitute intellectual creations."[10] The national copyright legislation in most of the Member States of the

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[4] *Berne Convention*, *ibid.*, Article 2.5: "Collections of literary or artistic works such as encyclopedias and anthologies which, by reason of the selection and arrangement of their contents, constitute intellectual creations shall be protected as such, without prejudice to the copyright in each of the works forming part of such collections".

[5] *TRIPS*, *supra* note 1, Article 10.2: "Compilations of data or other material, whether in machine readable or other form, which by reason of the selection or arrangement of their contents constitute intellectual creations shall be protected as such. Such protection, which shall not extend to the data or material itself, shall be without prejudice to any copyright subsisting in the data or material itself".

[6] *WCT*, *supra* note 1, Article 5: "Compilations of data or other material, in any form, which by reason of the selection or arrangement of their contents constitute intellectual creations, are protected as such. This protection does not extend to the data or the material itself and is without prejudice to any copyright subsisting in the data or material contained in the compilation".

[7] *Decision No. 351 of 17 December 1993 of the Commission of the Cartagena Agreement on the Common Provisions on Copyright and Neighboring Rights* [1993] "Gaceta Oficial del Acuerdo de Cartagena", 21/12/1993, No. 145 & "Gaceta Oficial de la República de Venezuela", 05/05/1994, No. 4.720, online: WIPO <http://www.wipo.int/clea/en/fiche.jsp?uid=ve003>.

[8] *Ibid.*, Article 4.II.

[9] *North American Free Trade Agreement between the Government of Canada, the Government of the United Mexican States and the Government of the United States of America*, 17 December 1992, Can. T.S. 1994 No. 2, 32 I.L.M. 289 (entered into force 1 January 1994).

[10] *Ibid.*, Article 1705.1.b.

WIPO includes explicit provisions on copyright protection of collections of literary and artistic works, such as encyclopedias and anthologies.[11]

"Non-original databases" and original databases are differentiated by the criterion of originality i.e. whether by reason of the selection or arrangement of their contents databases constitute intellectual creations or expressive works. For example, collections of literary or artistic works such as encyclopedias are original databases, for skill and judgment are used in the selection and arrangement of their content. By contrast phone books are not original databases, for alphabetical arrangement of the content is simply mechanical; it does not require any specific skill and judgment for the selection or arrangement of the content.

While original databases are protected under copyright as expressive works, non-original databases are not. The owners of non-original databases claim that they need additional legislative protection to protect their investments in the creation and marketing of databases from free-riders who can easily reproduce their products.

The European Union (E.U.), in response to the growing demands of the database owners to provide an adequate legal protection for their products, issued *Directive 96/9/EC on the legal protection of databases*[12] in 1996 (*Directive*) and introduced a new form of legal protection of non-original databases – the *sui generis* right. In addition, a *Basic Proposal for the Substantive Provisions of the Treaty on Intellectual Property* (IP) *in Respect of Databases* (*WIPO Database Treaty Draft*) was made at the diplomatic

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[11] Helga Tabuchi, "International Protection of Non-Original Databases: Studies on the Economic Impact of the IP Protection of Non-Original Databases" (Study prepared for the Standing Committee on Copyright and Related Rights, WIPO, 13-17 May 2002), online: WIPO <http://www.codata.org/codata02/03invited/Tabuchi/Tabuchi_CODATA_ejournal.pdf> at 3.

[12] EC, *Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases*, [1996] O.J.L 77/20 [*Directive*].

conference in Geneva on December 2 to 20, 1996.[13] The *WIPO Database Treaty Draft* incorporated provisions very similar to the ones of the *Directive*. While the *Directive* has been used for over a decade now, the *WIPO Database Treaty Draft* has not yet been approved by the WIPO members, mainly due to massive opposition and criticism by the Member States.[14]

This paper is dedicated to an analysis of the new form of legal protection of non-original databases - the *sui generis* right. Various justifications have been offered in the literature in support of the *sui generis* right; utilitarian, labor and social production theories are elaborated in this paper in relation to non-original databases. It is argued in this work that economic justification for the *sui generis* right, mainly focused on the "incentive" argument, can not justify *sui generis* protection. Empirical data examined in the paper suggests that there is no direct correlation between a *sui generis* right and the development of the database market. Analysis of the *sui generis* right within the labor theory shows that the *sui generis* right violates Locke's "sufficiency" proviso. Social production theory argues that IP can result from the voluntary collaboration of people and does not necessarily have to involve economic incentives. Thus, it is argued in this paper that IP theories (utilitarian, labor and social production) do not supply convincing theoretical arguments or empirical evidence in favor of introducing the *sui generis* right for non-original databases for both developed and developing countries.

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[13] *Basic Proposal for the Substantive Provisions of the Treaty on Intellectual Property in Respect of Databases*, 2-20 December 1996, CRNR/DC/6, online: WIPO <http://www.wipo.int/documents/en/diplconf/6dc_sta.htm> [*WIPO Database Treaty Draft*].

[14] See e.g. opposition to the *WIPO Database Treaty Draft*: "Proposals to Regulate the Public's Rights to use Information stored in 'Databases'", online: The Union for the Public Domain <http://www.public-domain.org/oldwww/database/database.html>. Union for the Public Domain is working to organize opposition to the *WIPO Database Treaty Draft*. Many of the criticisms gathered by the Union about *WIPO Database Treaty Draft* on these pages focus on the very broad definitions of a database, and the extraordinarily strong forms of ownership given to facts and other materials now in the public domain.

It is also asserted in this paper that the *sui generis* protection of non-original databases in the form proposed in the *WIPO Database Treaty Draft* would have a negative effect on developing countries[15] because, given that they are at present mainly consumers rather than producers of databases, the adoption of international *sui generis* norms would appear to generate an even less favorable cost-benefit balance for developing states compared to that for industrialized nations. As for the legitimate concerns of database producers regarding the need to protect the databases against the free-riders, these can be met within the framework of the existing IP laws and systems, by using technical measures for protecting their databases, or by the combination of the two.

Finally, it is argued in this paper that the *sui generis* right removes the traditional distinction in copyright law between protection of expression and protection of ideas, with the consequent risk of impeding the free circulation of ideas. The *sui generis* regime for databases would not aim to protect the databases themselves as new and creative products, but the information contained in them; the new right comes "precariously close

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[15] There is no established convention for the designation of "developed" and "developing" countries or areas in the United Nations (UN) system. The development of a country is measured with various statistical indexes such as income per capita (per person) (GDP), life expectancy, the rate of literacy, etc. The UN has developed the The Human Development Index (HDI), a comparative measure of life expectancy, literacy, education, and standard of living for countries worldwide. HDI is a compound indicator of the above statistics to gauge the level of human development for countries where data is available. Developing countries are in general countries which have not achieved a significant degree of industrialization relative to their populations, and which have a low standard of living. According to the United Nations, in common practice, Japan in Asia, Canada and the United States in northern America, Australia and New Zealand in Oceania and Europe are considered "developed" regions or areas. Others are considered "developing". The UN also recognizes "Least Developed Countries" (LDCs). These are countries which exhibit the lowest indicators of socioeconomic development, with the lowest HDI ratings of all countries in the world and face more than other countries the risk of failing to come out of poverty. These are over thirty LDCs in Africa (Chad, Rwanda, Burundi, etc.), several in Eurasia (for example, Nepal, Yemen, etc.), Haiti in North America, and a few in Oceania (for example, Samoa, Tuvalu, etc.) Some countries, mainly in Eastern Europe and the former USSR countries, are not included under either developed or developing regions. The term "countries in transition," i.e. in transition from centrally planned to free market economies, is applied to them.

to protecting basic information."[16] It is argued that the *sui generis* right, due to the very broad definition of a database and the excessive protection the right grants to the database owners, has the potential to create private monopolies on data and documents that have traditionally been in the public domain. The European Court of Justice decisions on the cases regarding the *sui generis* right that are reviewed in this paper create favorable conditions for the *de facto* monopolization of data.[17]

The paper concludes that the implementation of the *sui generis* right would also have negative effects on countries of all levels of development. Thus, the *sui generis* right should not be implemented at the international level beyond the E.U. region, and the needs of the producers of non-original databases to protect their products can be met by the combination of technical means and legal tools within the existing legal framework.

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[16] EC, "Evaluation of the 1996 Database Directive Raises Questions" *Single Market News* 40 (January 2006) 19, online: The Internal Market site of the EC <http://ec.europa.eu/internal_market/smn/smn40/docs/database-dir_en.pdf> ["Evaluation raises questions"].

[17] For further discussion on this topic see text *infra* at pp. 25-36 and 52-59.

Chapter 2

Legal framework of the *sui generis* right

The need for protection of non-original databases has been actively and widely discussed both at the international and domestic levels. There are three main reasons for such a rapid growth of interest in this issue. First, the importance of databases has increased, because information has become the new money of our time. The economies of the developed countries are gradually switching from manufacturing to information economies.[18] These economies rely heavily on their capacity to generate, process, and efficiently apply knowledge-based information and data. There is so much data produced that it becomes difficult both to find the specific information and, when found, to organize it in a manner that suits particular needs. In addition, data requires constant updates. Databases are the tool to resolve these difficulties.[19] Second, data collection often is a costly and rather complicated process.[20] The makers of the databases invest a lot of resources, time, money, and effort in the creation of databases and expect an adequate protection of their products. And, finally, the advances in digital technology, while facilitating the creation of databases and expanding their role and usefulness,

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[18] Emmanuel C. Lallana & Margaret N. Uy, *The Information Age* (UNDP-APDIP, 2003), online: Wikibooks <http://en.wikibooks.org/wiki/The_Information_Age>. According to Lallana and Uy, an information economy is where the productivity and competitiveness of units or agents in the economy (be they firms, regions or nations) depend mainly on their capacity to generate, process, and apply efficiently knowledge-based information. It is also described as an economy where information is both the currency and the product. The information economy changes the manner of obtaining profits. Profits in the manufactoring economy came from economies of scale – long runs of more or less identical products. Thus, we had factories, assembly lines, and industries. Now profits come from speed of innovation and the ability to attract and keep customers. Where before the winners were big manufacturers, now the winners are those who devise great ideas, develop trustworthy branding for themselves and their products, and market these effectively.

[19] Mark J. Davison, *The Legal Protection of Databases* (Cambridge; New York: Cambridge University Press, 2003) at 1 [Davison].

[20] John Bagby, "Who Owns the Data?" 24:1 *Research/Penn State* (January 2003), online: Research/Penn State <http://www.rps.psu.edu/0301/data.html> [Bagby].

provide quick, easy, and cheap means of copying and disseminating them.[21] The inability to control access to their products is a matter of a serious concern for the database owners;[22] therefore, they need additional legislative protection to protect their investments in the creation and marketing of databases from free-riders who reproduce their databases.[23]

While a few countries provide special forms of legal protection for non-original databases in their domestic legislation, many countries do not. There are also no general international norms regulating protection of non-original databases.

I. Directive 96/9/EC on the legal protection of databases

The E.U., in response to the growing demand of the database owners to provide an adequate legal protection for their products, issued the *Directive* in 1996,[24] which is legally binding on all E.U. Member States.[25] The new form of protection for non-original databases was established as a *sui generis* right. It provides a scope of rights somewhat similar to copyright. However, the criterion of originality, a necessary condition for granting copyright, is replaced by a standard of substantial investment.[26] Article 7.1 of the *Directive* grants:

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[21] Terry Sanks, "Database Protection: National and International Attempts to Provide Legal Protection for Databases" (1998) 25 *Fla. St. U. L. Rev.* 991 at 993 [Sanks].

[22] "Database owner" refers to a natural or legal person who has legal title to a database. Sanks, *supra* note 21 at 992.

[23] Davison, *supra* note 19 at 3.

[24] *Supra* note 12.

[25] *Directive, supra* note 12, Article 16.1: "Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive before 1 January 1998." Twenty five Member States transported the *Directive* into national law (although not all of them met the deadline established in the *Directive*). Two new members, Bulgaria and Romania (since January 1, 2007), are yet to implement the *Directive*'s provisions into their national laws.

[26] J.Carlos Fernandez-Molina, "The Legal Protection of Databases: the Current Situation of the International Harmonization Process", (2004) 56:6 *Aslib Proceedings: New Information Perspectives* 325 at 326 [Fernandez-Molina].

> a right for the maker of a database which shows that there has been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents to prevent extraction and/or re-utilization of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database.[27]

So, the database creators' investment of time, money, and effort is protected regardless of whether the database itself is innovative or original. The E.U. Member States are obliged to provide this right to the makers of databases, and this obligation exists independently of any copyright that may or may not subsist in the database or the contents of the database.[28] The term of protection is fifteen years, and the period of protection renews every time there is a substantial change to the contents of a database.[29]

There are three exceptions to the *sui generis* right that are left at the discretion of each Member State;[30] Member States may allow extraction or re-utilization of a substantial part of the database contents without the authorization of its maker in the cases of: (i) extraction for private purposes of the contents of a non-electronic database; (ii) extraction for the purposes of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved; and (c) extraction and/or re-utilization for the purposes of public security or an administrative or judicial procedure. However, it is important to remember that *sui generis* rights are not part of the copyright regime, and the entire doctrine of fair use of data will not apply to data protected under the *Directive*.[31] Under the concept of fair

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[27] *Directive*, *supra* note 12, Article 7.1.
[28] *Ibid.*, Article 7.4.
[29] *Ibid.*, Article 10.
[30] *Ibid.*, Article 9.
[31] James Love, "A Primer on the Proposed WIPO Treaty on Database Extraction Rights That Will Be Considered In December 1996" *Consumer Project on technology* (10 November 1996), online: Consumer Project on Technology <http://www.cptech.org/ip/cpt-dbcom.html> [Love].

use,[32] a doctrine of U.S. copyright law, limited use of copyrighted material without requiring permission from the right holders is allowed under certain conditions.[33] These exceptions (a four-factor test[34]) are listed in § 107 of the *Copyright Act of 1976*.[35] Compared to them, the *permissive* exemptions to the *sui generis* right "are not at least as extensive as under … copyright."[36] Designed for non-original creations, the *sui generis* right grants a much stronger protection to non-original databases than copyright does to expressive works. In this sense the *sui generis* right of the *Directive* is unique and unprecedented. There is no other jurisdiction that distinguishes in the same manner between creative and non-creative databases[37] or grants stronger protection to databases.

The *Directive* is criticized on numerous grounds. The key concerns are the following: the new *sui generis* right protects investment not creativity, creates new legal regimes, provides exclusive right to control uses of databases, defines "database" too broadly, establishes extensive terms of protection, leads to the inevitable increase of the cost of research, and threatens software developers, Internet companies and value added

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[32] "Fair dealing," a similar concept of exemptions from copyright, exists in other common law countries such as Canada, United Kingdom, Australia, and others.

[33] For more information on fair use doctrine see Libraries and Academic Resources Page, *Copyright and Fair Use*, online: Stanford University Library <http://fairuse.stanford.edu/>.

[34] For example, see A Resource for the University of California Community, "Fair Use", online: the University of California Copyright Education <http://www.universityofcalifornia.edu/copyright/fairuse.html>.

[35] *Copyright Act of 1976*, Pub. L. 94-553, [1976] 17 USC. 90 Stat. 2541. § 107: "In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include – (1) the purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work."

[36] Justin Hughes, "Political Economies of Harmonization: Database Protection and Information Patents", (Research paper series No. 47, Cardozo Law School, Jacob Burns Institute for Advanced Legal Studies, August 200), online: SSRN <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=318486> at 47 [Hughes, "Political economies of harmonization"].

[37] Philip J. Cardinale, "*Sui Generis* Database Protection: Second Thoughts in the European Union and What It Means for the United States" (2007) 6 *Chi.-Kent J. Intel. Prop.* 157 at 158.

database publishers.[38] The lack of a fair use exception that makes copyright work with fewer problems compared to the *sui generis* right is another issue. Finally, the main terms and notions of the *sui generis* right are unclear and vague; many problems are caused by the lack of accurate definitions of: the subject matter of a database right, the scope of a database right, the exemptions to it, licensing, the duration of database right, beneficiaries of protection, and the notion of "database."

The *sui generis* right protects the resources of the database producer invested in the database. This investment must be "substantial."[39] However, the *Directive* offers little guidance as to the minimal amount of investment required. The explanations are rather vague: the investment protected may be either "qualitative" or "quantitative."[40] According to Article 7.1, the substantial investment is to be made "in either the obtaining, verification or presentation of the contents" of the database. The "obtaining" must refer to the collection of data, works, or other materials comprising the database.[41] "Verification" relates to the checking, correcting and updating of data already existing in the database, and "presentation" involves the retrieval and communication of the compiled data.[42]

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[38] For more on criticism of the *sui generis* database protection see e.g.: James Boyle, "A Natural Experiment: Do We Want 'Faith-Based' IP Policy?" *Financial Times* (22 November 2004), online: Duke Law <http://www.law.duke.edu/boylesite/experiment.html> [Boyle, "A natural experiment"]; James Boyle, "Two database Cheers for the E.U.", *Financial Times* (2 January 2006), online: Financial Times Online <http://www.ft.com/cms/s/99610a50-7bb2-11da-ab8e-0000779e2340.html> [Boyle, "Two Database Cheers"]; Jonathan Band & Jonathan S. Gowdy, "*Sui Generis* Database Protection: Has Its Time Come?" *D-Lib Magazine* (June 1997) online: D-Lib Magazine <http://www.dlib.org/dlib/june97/06band.html> [Band & Gowdy]; Association of Research Libraries, "E.U. Database Directive Sets Dangerous Precedent for Librarians Worldwide", Memorandum (21 May 1998), online: Association of Research Libraries <http://www.arl.org/arldocs/pp/ppcopyright/copyresources/dbaseleg/105congress/iff1.pdf>; "Should Europe Repeal its Database Law?" *OUT-LAW News* (14 January 2005), online: OUT-LAW.com <http://www.out-law.com/page-6454>, Bagby, *supra* note 20, etc.

[39] *Directive*, *supra* note 12, Article 7.1.

[40] For more discussion on the "qualitative" and "quantitative" see *infra* text at pp. 33-34.

[41] For more discussion on "obtaining" see *infra* text at pp. 26-29.

[42] P. Bernt Hugenholtz, "The New Database Right: Early Case Law from Europe" (Paper presented at the 9th Annual Conference on International IP Law & Policy, Fordham University School of Law, New York, 19-20 April 2001), online: Institute of Information Law, Faculty of Law, University of Amsterdam

The national case law has highlighted the textual ambiguities of the *sui generis* right. Battles have erupted over the precise meaning of "substantial investment" as contained in Article 7 of the *Directive*.[43] As Hugenholts notes: "Not surprisingly, in view of … the European lawmaker's failure to provide clear-cut definitions, courts have been struggling with the application of various key concepts, such as the notion of 'database', the 'substantiality' of the investment required, the status of database 'maker', etc."[44]

The scope of the database right is defined in Article 7.1 as a right "to prevent extraction and/or reutilization of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database." Extraction is defined as "the permanent or temporary transfer of all or a substantial part of the contents of a database to another medium by any means or in any form."[45] Presumably, the right pertains to the downloading, copying, printing, or any other reproduction in permanent or temporary form.[46] Reutilization is defined as "any form of making available to the public all or a substantial part of the contents of a database by the distribution of copies, by renting, by on-line or other forms of transmission."[47] Again, the *Directive* fails to define "substantial," which certainly makes it difficult to apply the new *sui generis* right in practice. Extraction and reutilization of insubstantial parts are permitted, unless such acts are committed in a "repeated and systematic"[48] manner and "conflict with a normal

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<http://www.ivir.nl/publications/hugenholtz/fordham2001.html> [Hugenholtz, "The New Database Right"].

[43] For the relevant case law see P. Bernt Hugenholtz, "The Database Right File, a Collection of Case Law on the European Database Right" (last updated 13 January 2006), online: Institute of Information Law, Faculty of Law, University of Amsterdam <http://www.ivir.nl/files/database/index.html> [Hugenholtz, "The Database Right File"].

[44] Hugenholtz, "The New Database Right", *supra* note 42.

[45] *Directive*, *supra* note 12, Article 7.2.a.

[46] Hugenholtz, "The New Database Right", *supra* note 42.

[47] *Directive*, *supra* note 12, Article 7.2.b.

[48] *Ibid.*, Article 7.5.

exploitation of that database or … unreasonably prejudice the legitimate interests of the maker of the database."[49]

The *Directive* allows for only limited statutory exemptions in respect of the database right.[50] As Hugenholtz notes, article 9 leaves no room for many traditional limitations, such as journalistic freedoms, quotation rights, library privileges, or reuse of government information: "apparently, the users' freedom to extract and reutilize insubstantial parts of the database was considered, by the European legislature, to be sufficient."[51]

Another problem is related to the duration of the *sui generis* right. While the term of protection is fifteen years from the date of completion of the making of the database,[52] in practice, most databases will probably be protected for a longer period. Technically, the *Directive* makes it possible to extend the term of protection[53] for as long as the database owner needs: a regularly updated database is awarded semi-permanent protection.[54] According to Recital 55, even a mere "substantial verification of the contents of the database" is enough to start a new term of protection.

Article 11 establishes the principle of reciprocity: the *sui generis* right protection extends to those databases that are produced in the EU countries only. The Directive does not extend similar protection to a database producer in a non-EU nation, unless that producer has a significant operational presence in an EU country (Article 11.2) or unless

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[49] *Ibid.*
[50] The *Directive*, *supra* note 12, Article 9.
[51] Hugenholtz, "The New Database Right", *supra* note 42.
[52] The *Directive*, *supra* note 12, Article 10.1.
[53] *Ibid.*, Article 10.3: "any substantial change, evaluated qualitatively or quantitatively, to the contents of the database, including any substantial change resulting from the accumulation of successive additions, deletions or alterations, which would result in the database being considered to be a substantial new investment, evaluated qualitatively or quantitatively, shall qualify the database resulting from that investment for its own terms of protection."
[54] Hugenholtz, "The New Database Right", *supra* note 42.

its home country offers comparable protection to EU database producers (Article 11.3 -"Agreements extending the right ... to databases made in third countries ... shall be concluded by the [European] Council ..." and Recital 56, which notes that protection "should" be granted to other nations databases only if those nations "offer comparable protection to databases produced by [EU] nationals").[55] That is a matter of serious concern for the database makers from outside the E.U.: their databases entering the E.U. market cannot receive the *sui generis* protection unless the country of the database owner's origin grants the same protection to the databases produced in the E.U.

A matter of a significant concern is the absence of compulsory licenses. The initial proposal of the *Directive* provided for a scheme of compulsory licenses: if certain data or pieces of information could be acquired from only one source, the maker of the database could be compelled to license under fair and non-discriminatory terms the use of such data under Article 8.1 – 8.2 of the initial proposal.[56] These provisions were deleted from the final *Directive*.[57]

Finally, the issue of the *definition of a database* deserves particularly close attention. Article 1.2 of the *Directive* defines a database as "a collection of independent works, data or other material arranged in a systematic or methodical way and individually accessible by electronic or other means." The definition of a database in Article 2 of the *Directive* includes three elements: collection of independent materials, systematic or methodical arrangement, and individual accessibility. The *Directive* itself gives little

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[55] *Directive*, *supra* note 12, Article 11, Recital 56.

[56] P. Bernt Hugenholtz, "Implementing the European Database Directive" in Jan J.C. Kabel & Gerard J.H.M. Mom, eds., *Intellectual Property and Information Law, Essays in Honour of Herman Cohen Jehoram* (The Hague/London/Boston: Kluwer Law International 1998) 183, online: The Institute of Information Law, Faculty of Law, University of Amsterdam <www.ivir.nl/publications/hugenholtz/PBH-HCJ-LIB.doc>.

[57] For more on the problems related to the sole-sourced databases and the absence of the compulsory licensing schemes see chapter 3, section I, *infra*.

guidance to a proper understanding of its definition. The 'independence' requirement is explained in the Preamble of the *Directive* by an example:

> the term database should be understood to include literary, artistic, musical or other collection of works or collection of other material such as text, sound, images, numbers, facts, and data; whereas it should cover collections of independent works, data or other materials which are systematically or methodically arranged and can be individually accessed; whereas this means that a recording or an audiovisual cinematographic, literary or musical work as such does not fall within the scope of this Directive.[58]

The term 'database' also does not extend to "computer programs used in the making or operation of a database."[59]

The European Court of Justice (ECJ), the highest court in the E.U.,[60] in its judgment in the *Fixtures Marketing Ltd. (Fixtures) v. Organismos prognostikon agonon podosfairou (OPAP)*,[61] interpreting Article 1.2 of the *Directive*, required that the materials be separable from one another "without their informative, literary, artistic, musical or other value being affected."[62] According to the Advocate-General's Opinion[63] on the same case, the independence criterion should be understood "as meaning that the data or materials must not be linked or must at least be capable of being separated without losing their informative content."[64]

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[58] *Directive*, *supra* note 12, Preamble, recital 17.
[59] *Ibid.*, recital 23.
[60] The ECJ ensures that E.U. legislation is interpreted and applied in the same way in all E.U. countries and that E.U. Member States and institutions comply with the requirements of law. The ECJ has the power to settle legal disputes between E.U. Member States, E.U. institutions, businesses and individuals. The Court is composed of one judge per member state, so that all 27 of the E.U.'s national legal systems are represented. The Court is assisted by eight 'advocates-general'. Their role is to present reasoned opinions on the cases brought before the Court. For more information on the ECJ see: "The Court of Justice", online: EUROPA <http://europa.eu/institutions/inst/justice/index_en.htm> and "The Court of Justice of the European Communities", online: CURIA <http://curia.europa.eu/en/instit/presentationfr/index_cje.htm>.
[61] *Fixtures Marketing Ltd. v. Organismos prognostikon agonon podosfairou,* C-444/02, [2004] E.C.R. I-10549 [*Fixtures v. OPAP*].
[62] *Ibid.*, at para. 29.
[63] *Fixtures v. OPAP*, Opinion of Advocate General Stix-Hackl (8 June 2004) [2004] E.C.R. I-10549.
[64] *Ibid.*, at para. 39.

The systematical or methodical arrangement criterion makes sure that randomly accumulated information does not fall within the scope of the definition. Recital 21 of the Preamble in the *Directive* states that it is not necessary "for those materials to have been physically stored in an organized manner." The ECJ in its judgment on *Fixtures v. OPAP* clarified that:

> collection should be contained in a fixed base … and include technical means such as electronic, electromagnetic or electro-optical … , or other means such as an index, a table of contents, or a particular plan or method of classification, to allow the retrieval of any independent material contained within it.[65]

The Advocate-General proposed an even lower criterion of the systematical or methodical arrangement. The Advocate-General stated that collection is systematically or methodically arranged "if a structure is established for the data and they are organised only following application of the appropriate search programme, and thus essentially through sorting and, possibly, indexation."[66] Based on these clarifications it can be argued that the threshold established by the "arrangement" criterion of the *Directive* definition of database is rather low. Thus, the ECJ has stressed the broad definition of "database" in the *Directive*.[67] National case law also shows that the notion of "database" has been interpreted widely so as to include listings of telephone subscribers, compilations of case-law and legislation, websites containing lists of classified advertisements, catalogues of various information, newspapers, magazines, and training manuals.[68] For example, in the so-called *C-Villas* case,[69] the Austrian Supreme Court

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[65] *Fixtures v. OPAP, supra* note 60 at para. 30.
[66] *Ibid.*, at para. 40.
[67] Katharine Stephens, "*British Horseracing Board v. William Hill*: The Race is Never Lost, Till Won", Bird & Bird Case Reports (8 February 2005), online: Bird & Bird <http://www.twobirds.com/english/publications/articles/British_Horseracing_Board_v_William_Hill.cfm>.
[68] Hugenholtz, "The Database Right File", *supra* note 43.

held that a homepage with information on eight holiday houses located on Caribbean islands had been systematically arranged, since the villas were described per island, village, and based on the housing equipment. In the *Babynet* case[70] in Germany, the District Court of Cologne held that a website with 251 alphabetically arranged links was a systematically arranged collection of independent materials.[71]

The individual accessibility element of the definition set forth in Article 1.2 of the *Directive* requires that the independent materials making up the collection are individually accessible by electronic or other means. The ECJ in the *Fixtures v. OPAP* decision discussed the second and third requirements rather briefly and concluded that, together, they make it possible "to distinguish a database within the meaning of the *Directive*, characterised by a means of retrieving each of its constituent materials, from a collection of materials providing information without means of processing the individual materials which make it up."[72] Thus, the decision upheld the argument that it is unlikely that independent works, data, and materials can be stored systematically or methodologically in a database without being individually accessible.

However, even with the clarifications of the ECJ, the definition of a database remains very broad; Maurer calls it "extremely elastic."[73] Such a definition causes serious problems: the scope of the items relevant to commercial activities on the database market

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[69] *'C* Villas', Website als Datenbank, Klagsberechtigung von Miturhebern, individuelle Schöpfung* (10 July 2001) 4Ob155/01z (Oberste Gerichtshof), online: Rechtsprobleme.at <http://www.rechtsprobleme.at/doks/urteile/datenbank-website.html>.

[70] *Kidnet v. Babynet* (25 August 1999) 28 0 527/98 (Landgericht Köln), online: Netlaw.de <http://www.netlaw.de/urteile/lgk_14.htm>.

[71] "What is a Database under E.U. Law?" *Law and Information Weblog at Harvard Law School* (23 November 2004), online: Harvard Law School <http://blogs.law.harvard.edu/ugasser/2004/11/23/what-is-a-database-under-eu-law/>.

[72] *Directive*, *supra* note 12, para. 31.

[73] Steven Maurer, "Across Two Worlds: Database Protection in the U.S. and Europe" (paper prepared for Industry Canada's Conference on Intellectual Property and Innovation in the Knowledge-based Economy, 23-24 My 2001), online: Industry Canada <http://www.srategis.ic.gc.ca/SSI/ipf/maurer.pdf> at 13-41 [Maurer].

is very large, and nearly any type of information or work can be included in and protected as a database. The last consideration raises issues of commodifying information and impeding dissemination and exchange of knowledge (a particular concern of the scientific community).[74] The definition given in the *Directive* definitely requires serious revision in order to strictly limit the concept of database to those developed for commercial exploitation.[75]

II. WIPO Database Treaty Draft

The *WIPO Database Treaty Draft* was presented at the Diplomatic Conference at Geneva on December 2-20, 1996.[76] Proposals for the international harmonization of the *sui generis* protection of databases were made to the WIPO Committees of Experts early in 1996 by the E.U. and then by the U.S.[77] Proposed after the *Directive*, the draft contains provisions very similar (in some cases, word for word) to the ones of the *Directive* and, thus, receives the same criticism as the *Directive*. Since this is the draft of an *international* treaty, and the scale of it is not limited to a certain region (like the E.U.),

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[74] Bagby, *supra* note 20, warns that new database rights may subvert scholarship if they are not more precisely targeted. Band & Gowdy, *supra* note 38, voice specific concerns of the scientists, researchers, interoperable software developers, Internet companies, value added database publishers, and businesses which rely on customer lists and other data. See also *IP Protection of databases: Submission to Industry Canada* (13 January 1998), online: Canadian Association of Research Libraries <http://www.carl-abrc.ca/copyright/database_protection-e.html>. It is stated that in the future much information generated is likely to be collected into databases and be controlled digitally. With the new *sui generis* legislation "what was once a fact not capable of copyright protection will become an item of data, and will be contained in a database and hence potentially capable of protection under copyright… For Canada's research libraries whose priority is the swift and unimpeded communication of research, this is unacceptable."

[75] Jacqueline Lipton, "Balancing Private Rights and Public Policies: Reconceptualizing Property in Databases" (2003) 18:3 *Berkley Tech. L. J.*, online: Berkley technology Journal Online <http://www.law.berkeley.edu/journals/btlj/articles/vol18/Lipton.web.pdf > at 27 [Lipton, "Balancing Private Rights"].

[76] *Supra* note 13.

[77] See the Chairman of the Committees of Experts, *Memorandum* (Prepared for the WIPO Diplomatic Conference at Geneva on December 2-20, 1996) CRNR/DC/6, online: WIPO <http://www.wipo.int/documents/en/diplconf/6dc_mem.htm> at paras. 4-5.

the opposition to the *WIPO Database Treaty Draft* is rather significant. As a result, to date the *WIPO Draft Treaty Draft* has not been adopted.

"Database" is defined by the *WIPO Database Treaty Draft* as "a collection of independent works, data or other material arranged in a systematic or methodical way and capable of being individually accessed by electronic or other means."[78] The scope of protection is defined in Article 1.1: "Contracting Parties shall protect any database that represents a substantial investment in the collection, assembly, verification, organization or presentation of the contents of the database." Thus, the *WIPO Database Treaty Draft* protects the resources invested by the database owner in a database. Under the *WIPO Database Treaty Draft* "extraction" means the permanent or temporary transfer of all or a substantial part of the contents of a database to another medium by any means or in any form;[79] "substantial investment" means any qualitatively or quantitatively significant investment of human, financial, technical, or other resources in the collection, assembly, verification, organization or presentation of the contents of the database;[80] "substantial part", in reference to the contents of a database, means any portion of the database, including an accumulation of small portions, that is of qualitative or quantitative significance to the value of the database.[81]

The one difference between the *Directive* and the *WIPO Database Treaty Draft* is that the latter never uses the term "*sui generis* right", although it defines the database right in the same manner as the *Directive* defines the *sui generis* right: "the maker of a database has the right to authorize or prohibit the extraction or utilization of its

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[78] *WIPO Database Treaty Draft*, *supra* note 13, Article 2.i.
[79] *Ibid.*, Article 2.ii.
[80] *Ibid.*, Article 2.iv.
[81] *Ibid.*, Article 2.v.

contents."[82] Another difference is that the *WIPO Database Treaty Draft* proposes two alternative terms of protection, fifteen or twenty-five years,[83] at the discretion of the Member States, but keeps the provision that any substantial changes to the database which constitute a substantial investment launch the new term of protection of the new changed database.[84]

As illustrated above, almost all the provisions and definitions of the *WIPO Database Treaty Draft* are very similar to (in some cases exactly the same as) those in the *Directive* and, thus, have the same flaws. The *WIPO Database Treaty Draft* receives the same criticism as the *Directive*: the database right protects investment, not creativity, creates new legal regimes, provides exclusive rights to control uses of databases, defines database too broadly and "substantial investment" too vaguely (which leads to the ambiguity of the essential concepts of the *WIPO Database Treaty Draft*), extends terms of protection, leads to the inevitable increase of the cost of research, and threatens software developers, Internet companies and value added database publishers with being put out of business.[85] Aside from the E.U. countries, there has been relatively little enthusiasm at WIPO to move forward quickly on database protection. The U.S., China, India, and many developing and Eastern European countries either oppose the *sui generis* protection or insist that such a regime must at least have strong safeguards for research, education, and for non-profit and developing country uses of data – the WIPO 1999

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[82] *Ibid.*, Article 3.1.
[83] *Ibid.*, Article 8.1, 8.2.
[84] *Ibid.*, Article 8.3.
[85] See *supra* note 14.

regional "roundtables" produced more expressions of skepticism of than support for database protection.[86]

The *WIPO Database Treaty Draft* was created over a decade ago, but to date the Member States have been unable to work out a consensus that would suit everybody, so the debates go on. Meanwhile, the database owners have no legal protection, and they are concerned that, while database technology continues to progress, the laws protecting and promoting the economic value of databases have failed to advance at the same rate.[87]

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[86] Hughes, "Political Economies for Harmonization", *supra* note 36 at 30.
[87] Sanks, *supra* note 21 at 992-993.

Chapter 3

Theoretical justifications of the *sui generis* right

Since the time the *Directive* was passed, there has been an on-going debate on whether there is a need for new legal protection of non-original databases in the countries outside the E.U. Various justifications for the need for the protection of non-original databases are being offered. The majority of them are based on the theories of IP that explain the need for IP protection in general.[88] Since it is not possible to examine all of the theories within this paper, only the most commonly used theories will be discussed here: Locke's labor theory, the social production theory, and the utilitarian theory, with the emphasis on the incentive argument of the utilitarian theory. The purpose of applying these theories to database protection is not only to point out the flaws of using them as a justification of the *sui generis* right but, most importantly, to illustrate the most serious problem with the new database right – monopolization of information.

I. Locke's Labor Theory

Locke's labor theory is based on the following premises: God gave the world to people in common "to make use of it to the best advantages of life, and convenience".[89] When a person mixes his labor with a part of the common property in order to produce

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[88] For more information, see e.g. William Fisher, "Theories of IP" in Stephen Munzer, ed., *New Essays in the Legal and Political Theory of Property* (Cambridge University Press, 2001), online: Harvard Law School <http://www.law.harvard.edu/faculty/tfisher/iptheory.html> [Fisher] (four theories are discussed: utilitarian theory, Locke's labor theory, Kant and Hegel's fundamental human needs theory, and social planning theory); Adam Moore, "IP, Innovation, and Social Progress: the Case against Incentive-Based Argument", (2003) 26:3 *Hamline L. Rev.* 602 (Discusses utilitarian property) [Moore]; Giovanni Ramello, "IP and the markets of Ideas", (2005) 4:2 *Review of Network Economics* 161 (discusses labor and utilitarian theories); Mark A. Lemley, "*Ex Ante Versus Ex Post* Justifications for IP" (UC Berkeley Public Law Research Paper No. 144), online: SSRN <http://ssrn.com/abstract=494424> (evaluates *ex ante* and *ex post* theories).

[89] John Locke, *Second Treatise on Government* (1690), reprinted in John Locke, *Second Treatise on Government* (Indianapolis and Cambridge: Hackett Publishing Company, 1980) at para. 25.

something, he comes to own it provided there is "enough and as good left"[90] in common for others (the first or "sufficiency" proviso) and that "every man should have as much as he could make use of"[91] so that the products of labor are not wasted or allowed to spoil[92] (the second or "spoilage" proviso). The IP justification here is that a person who labors upon resources that are considered "commons"[93] has a natural property right to the fruits of his or her efforts subject to the two provisos. There are many questions regarding labor theory when it is applied to IP.[94] Only certain aspects of these discussions that are of a particular interest when applied to database protection will be examined here.

To start with, it is frequently argued that although Locke had in mind physical property such as land, it would seem that this theory is naturally applicable to IP as well. Spinello asks: "Should not those who extend intellectual labor be rewarded by ownership in the fruits of their labor and be allowed to 'enclose in from the commons'?"[95] Hughes argues that even though intellectual labor is not as unpleasant and difficult as physical labor, a property right is still deserved since that labor creates something of a social value.[96] So, since a minimum amount of unskilled labor can theoretically entitle a person to property rights in the results of such labor provided that there is enough left for others, it can be assumed that, according to Locke's theory, there is no reason for makers of non-original databases not to receive property rights in these databases.

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[90] *Ibid.*, at para. 32.
[91] *Ibid.*, at para. 36.
[92] *Ibid.*, at para. 37.
[93] Defined by Locke as raw materials, owned by the community as a whole.
[94] For example, does Locke's theory provide support for *any* intellectual-property rights?; why exactly should labor upon a resource held "in common" entitle the laborer to a property right in the resource itself?; what is "intellectual labor"?; what are "the commons"?; the issue of "sufficiency"; the problem of proportionality, and many others.
[95] Richard A. Spinello, *CyberEthics, Morality and Law in Cyberspace*, 2nd ed., (Sudbury, Massachusetts, Boston, Toronto, London, Singapore: Jones and Bartlett Publishers, 2003) at 99.
[96] Justin Hughes, "The Philosophy of Intellectual Property", (1988) 77 *Geo. L.J.* 287 at 299-330.

In copyright a person receives exclusive rights to a work as a result of her creative intellectual labor. Copyright does not protect ideas, just expressions. The "sufficiency" proviso is not violated, since after copyright protection there as many ideas left in the commons as before. Copyright protection is arguably consistent with the labor theory.

It is a different case with the *sui generis* right. The *Directive* protects databases that do not require skill and judgment for the selection and arrangement of its content. In the same manner copyright does not and should not protect ideas, the *sui generis* right should not protect data. Copyright protects expressions, but the sui generis right has no expression to protect: non-original databases have no elements of creativity or originality. So, the *sui generis* right protects database contents that require time and effort invested in its creation,[97] along with the financial investments.

Also, as it will be discussed later, an excessive *sui generis* right overlaps with copyright. When too many owners have the rights of exclusion, waste in the form of underuse of the information may be produced[98] (the so-called "anti-commons effect"[99]). If the *sui generis* right produces waste, it will violate the spoilage proviso. Finally, *sui generis* rights protection violates Locke's "sufficiency" proviso: in practice the *sui generis* right as it is interpreted in the E.U. jurisdiction facilitates monopolization of information. The remainder of this section will be dedicated to the elaboration of the last statement.

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[97] The *Directive, supra* note 12, recital 39: "...this Directive seeks to safeguard the position of makers of databases against misappropriation of the results of financial and professional investment"; and paragraph 40 – "...the object of this *sui generis* right is to ensure protection of any investment in obtaining, verifying or presenting the contents of a database... ", and Preamble, recital 7 – "...the making of databases requires the investment of considerable human, technical and financial resources..."

[98] For further discussion on this topic see *infra* text at pp. 59-60.

[99] Maurer, *supra* note 73 at 13-2.

Locke's "sufficiency" proviso means that others, who are no longer free to use the appropriated property, should not be made worse off than before the property was appropriated, and thus there is as much and as good left as before. It may seem that creation of non-original databases does not make people worse off, because society only gains from receiving a collection of processed data organized conveniently for usage, and because data itself is not protected by the *sui generis* right. The *sui generis* right *de jure* protects only the rights of the database maker to prevent unauthorized extraction and re-utilization of the database *per se* or a substantial part thereof.[100] But the *Directive*'s interpretation and implementation proves that the *sui generis* right allows *de facto* monopolization of data itself.[101]

In 2004 the European Court of Justice issued four judgments in the cases concerning the *Directive*: *Fixtures Marketing Ltd v. Oy Veikkaus Ab,*[102] *The British Horseracing Board Ltd and Others ("BHB") v. William Hill Organisation Ltd ('Hill'),*[103] *Fixtures Marketing Ltd v. Svenska Spel AB,*[104] and *Fixtures Marketing Ltd v. Organismos prognostikon agonon podosfàirou ("OPAP").*[105] The four cases concerned similar facts in that each related to a database of sporting information. Fixtures, on behalf of the professional football leagues, grants licenses for the exploitation of the fixture lists (i.e. schedules and other information regarding sporting events) for the top English and Scottish football leagues outside of the U. K. Oy Veikkaus, Svenska Spel and OPAP organize betting pools in Finland, Sweden, and Greece. They used data relating to

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[100] The *Directive, supra* note 12, Article 7.1.
[101] Fernandez-Molina, *supra* note 26 at 328.
[102] *Fixtures Marketing Ltd v. Oy Veikkaus Ab,* C-46/02, [2004] E.C.R. I-10365 [*Fixtures v. Oy Veikkaus*].
[103] *The British Horseracing Board Ltd and Others v. William Hill Organization Ltd.,* C-203/02, [2004] E.C.R. I-10415 [*BHB v. Hill*].
[104] *Fixtures Marketing Ltd v. Svenska Spel AB,* C-338/02, [2004] E.C.R. I-10497.
[105] *Fixtures v. OPAP, supra* note 61.

matches in the English and Scottish football leagues from Fixtures, and had no license to obtain information from Fixutres. The BHB organizes the British horseracing industry and provides detailed information about the races in its database. Hill is a leading provider of the odds on horseracing, and it obtains its information from a subscription to a third party that is licensed by the BHB. Fixtures and the BHB alleged that their rights under the *Directive* were infringed by companies using their sporting databases for the purpose of taking bets on football matches and horseracing.

The ECJ used these four cases to clarify key concepts of the *Directive* and to solve practical difficulties of the application of the *sui generis* right. The court realized the need to limit the scope of *sui generis* protection and thus to decrease the danger of the appearance of information monopolies. But instead of applying the idea-expression concept that was used for similar purposes in copyright,[106] it worked out a new approach.

In the *BHB v. Hill* case, William Hill argued that it would only be infringing the database right if the data that it had extracted or reutilized reflected the systematic or methodical arrangement ("databaseness,"[107] as he called it in the domestic U.K. case) of the plaintiff's database. Apparently, Hill was drawing the argument from the idea-expression concept, assuming that, analogous to ideas, data is available for everyone to use while "databaseness", analogous to expression, should be protected. Unfortunately, since the contents taken by Hill from the BHB's database did not constitute a substantial part of a database in the eyes of the ECJ, it saw no need to answer this question. Instead of resolving the issue of data-"databaseness," the ECJ, in the decisions in the four cases

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[106] For more on the idea-expression see *infra* discussion of *BHB v. Hill* case.
[107] *The British Horseracing Board Ltd and Others v. William Hill Organization Ltd.* (2001) HC 2000/1335, [2001] RPC 31 (Ch.) at paras. 44-45 [*BHB v. Hill*, HC].

discussed earlier, distinguished between "creating" and "obtaining" data. In relation to football fixtures, it stated:

> Finding and collecting the data which make up a football fixture list do not require any particular effort on the part of the professional leagues. Those activities are indivisibly linked to the creation of those data, in which the leagues participate directly as those responsible for the organisation of football league fixtures. Obtaining the contents of a football fixture list thus does not require any investment independent of that required for the creation of the data contained in that list.[108]

The ECJ clarified which type of activities and investment can be ascribed to the creation of data, as opposed to obtaining it:

> 10. The preparation of those fixture lists requires a number of factors to be taken into account, such as the need to ensure the alternation of home and away matches, the need to ensure that several clubs from the same town are not playing at home on the same day, the constraints arising in connection with international fixtures, whether other public events are taking place and the availability of policing.
> 11. Work on the preparation of the fixture lists begins a year before the start of the season concerned. It is entrusted to a working group consisting, *inter alia*, of representatives of the professional leagues and football clubs and necessitates a certain number of meetings between those representatives and representatives of supporters' associations and the police authorities.
> ...
> 42 ...[s]uch resources represent an investment in the creation of the fixture list. Such an investment, which relates to the organisation as such of the leagues is linked to the creation of the data contained in the database at issue.[109]

So, the ECJ judgment through a strict interpretation of "obtaining" restricted the scope of the *sui generis* right protection to collections of pre-existing data and denied protection to collections of untreated "created" sole-source data. Thus, only databases that include *obtained* information, not *created*, can be protected under the *sui generis* right. This distinction, in the view of the ECJ, should resolve the issue of sole-source data providers

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[108] *Fixtures v. Oy Veikkaus, supra* note 102 at para. 44.
[109] *Ibid.*, at paras. 10-11, 42.

which, with the assistance of the *sui generis* right, can turn into information monopolists. In its result, the distinction between creating and obtaining data is, as Maskus and Hugenholtz put it, "somewhat similar to the so-called idea-expression dichotomy in copyright – the maxim that copyright protects only original expression, leaving untreated ideas, facts and theories in public domain."[110]

However, similarly to the idea-expression dichotomy in copyright, the creating/obtaining approach does not offer more clarity or certainty. A number of problems can be identified. While the ECJ appears to be confident it can distinguish between "creating" and "obtaining" data, the distinction is not always so easy to make. As Maskus and Hugenholtz note with respect to the recording of meteorological data such as the daily maximum temperature in a particular location – "[a]re those data created or obtained? Similarly, do scientists obtain the genetic sequences of living organisms or do they create them?"[111] Also, even though "created" content of a database according to the ECJ judgement in *BHB v. Hill* is not protected, there are still ways for "creators" of the contents of a database like BHB to get around this restriction. Now they cannot claim the *sui generis* rights protection by showing substantial investments in *obtaining* data, but still can by showing substantial investments in *verification or presentation* of data. The ECJ's judgment distinguishing between "obtaining" and "creating" was intended to address the problem of potential abuses such as monopolization of information and to limit the scope of rights under the *Directive*; however, it definitely is not a flawless solution of the problem. As Maskus and Hugenholtz conclude: "The ECJ decisions do

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[110] Mark Davison & P. Bernt Hugenholtz "Football Fixtures, Horse Races and Spin-Offs: the ECJ Domesticates the Database Right" (2005) 27:3 *Eur. I.P.Rev.* 113 at 115 [Davison & Hugenholtz, "Football Fixtures"].
[111] *Ibid.*

not, and indeed cannot, solve the problem of *de facto* monopolization of data by sole-source database producers."[112]

Even with the creating/obtaining approach, the tendency of the *de facto* monopolization of data exists. The *BHB v. Hill* case demonstrates it most clearly. This case is concerned with horseracing and, in particular, the extent to which, if at all, the claimants can prevent the defendant from using, in a new part of its business and without their license, certain data which, according to the claimants, have been derived *indirectly* from them.

The BHB, founded in 1993, undertook an annual process culminating in weekly advertisements in The Racing Calendar of some 7,800 races. In support of its functions, the board maintained a computerized collection of information, the BHB's database. Fees charged to third parties for use of information therein yielded just over £31 million per year.[113] In May 1999, Hill began to develop a comprehensive service of supplying racing information to its betting clientele and launched its website on February 3, 2000.[114] Hill had obtained racing data not from the BHB, but via a third party, Satellite Information Services (SIS), which was licensed to access and use the BHB's database and to transmit data to its own subscribers in the form of a "raw data feed."[115] The information displayed on Hill's internet sites represented "a very small proportion of the total amount of data on the BHB database":[116] only the dates, times, and places of races together with the names and numbers of horses running in those races. The BHB's database contained considerably more information, such as data on horse ownership, breeding, identification,

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[112] *Ibid.*
[113] *BHB v. Hill*, HC, *supra* note 107 at paras. 3-11.
[114] *Ibid.*, at paras. 13-14.
[115] *BHB v. Hill*, *supra* note 103 at paras. 16-18.
[116] *Ibid.*, at para. 19.

as well as details of their jockeys and trainers, the distance over which the race was to be run, the criteria for eligibility to enter the race, the date by which entries had to be received, the entry fee payable, and the amount of money the racecourse was to contribute to the prize money for the race. Also, the horse races and the lists of runners were arranged differently on Hill's internet sites compared to the BHB database.[117] The BHB claimed that each day's use of data taken from the SIS by Hill, which was a subscriber to the raw data feed produced by the SIS, was an extraction or re-utilization of a substantial part of the BHB's database, contrary to article 7.1 of the *Directive*, and that even if the individual extracts made by Hill were not substantial, they should be prohibited under Article 7.5 of the *Directive*.[118]

The defendant's most fundamental submission was the following: what Hill had used was not a part, in the relevant sense, of the BHB's database. The infringement could only occur if data were acquired directly from the plaintiff's database. Hill had acquired the data from a third party, licensed by BHB to obtain this data and to transmit it to its subscribers. As Hill lawfully acquired data from this third party, it could not have infringed the BHB's database right. And even if Hill had extracted a part of BHB's database, it was not a substantial part, and did not affect in any way normal exploitation of the BHB's database. The ECJ agreed that what Hill had extracted was not a substantial part of a database, but also ruled that it was a part of *BHB's* database, for "the concepts of extraction and reutilisation do not imply direct access to the database concerned."[119] This

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[117] *Ibid.*
[118] *Ibid.*, at para. 20.
Article 7.5 of the *Directive, supra* note 12: "The repeated and systematic extraction and/or re-utilization of insubstantial parts of the contents of the database implying acts which conflict with a normal exploitation of that database or which unreasonably prejudice the legitimate interests of the maker of the database shall not be permitted".
[119] *BHB v. Hill, supra* note 103 at para. 53.

ruling suggests that the copying of a part of the original database from a third party's copy may constitute extraction contrary to Article 7.1 of the *Directive*.

Technically, the indirect access judgment could lead to the decision of the ECJ in favor of BHB. But the ECJ did not rule in favor of BHB:[120] the contents of BHB's database were considered by the ECJ as "created," not "obtained,"[121] and thus BHB's database could not qualify for the *sui generis* rights protection

The problems with the ECJ approach to the concept of creating/obtaining and indirect extraction and reutilization can be illustrated with this somewhat simplified hypothetical situation. There is a city's Transport Centre that has information on all the transportation available in this city (subway, taxi cabs, ferries, city and intercity buses and trains, etc.), and presents it in the form of a complex, centralized, regularly updated database that includes schedules, phone numbers, information on the road works, route changes, etc. There is a Trip Planner company that acquired a license from the Transport System on extraction of the information regarding city buses from the Transport System's database to perform trip planning services online: after the customer's input of date, time, destination, and departure, the electronic database of the Trip Planner generates the optimum individual trip plan on the buses within the city. There is also a person, a subscriber to the Trip Planner website, who creates an independent database that includes information on the bus schedules for all the bus stops within one area of the city and offers it to the local community.

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[120] After the ECJ the case went to the High Court of Appeal, which was to apply the rulings of the ECJ. See *The British Horseracing Board Ltd and Others v. William Hill Organization Ltd.* [2005] EWCA (Civ) 863. In the final judgment, L.J. Jacob at para.3 noted that the ECJ's interpretational directions, while clarifying certain key concepts of the *Directive*, had done little to clear things up on the particular case: "Each side says that, properly understood, the ruling means that they have won. Or, rather than the other side winning, there is some doubt about what the ECJ meant and there should be another reference."

[121] See *supra* text at 26-29.

The city's Transport Centre, the sole source of the relevant information, cannot no longer claim the *sui generis* protection under "obtaining" (for it creates information), but it can still do so by proving its substantial investment in presenting information. The Transport Centre can prove that it requires significant financial and human resources to maintain its electronic database, to regularly update it, keep track of the changes in routes and schedules, etc. Thus, the Transport Centre can receive the *sui generis* rights protection of its database by showing substantial investment in the presentation of the contents. Consequently, if its database is protected under the *sui generis* right, the Transport Centre then can sue the creator of the database on the bus schedules in one area of the city for extraction and repeated re-utilization of a part of the Transport Centre's database. Considering that, in light of the *BHB v. Hill* judgment, "the concepts of extraction and reutilisation do not imply direct access to the database concerned," the Transport Centre may be successful with its claim. Even though the Trip Planner is licensed by the Transport Centre to display and transmit relevant data, the copying of a part of the Trip Planner's database by a person may constitute indirect extraction from the Transport Centre's database and thus violate Article 7.1 of the *Directive*. In the case where there is no other independent source of information on bus schedules available in the city, and with the *sui generis* right on its side, the Transport Centre becomes *de facto* monopolist of this data.

Aside from its own issues, the new *sui generis* right also faces problems traditionally inherent to copyright. For instance, while the ECJ clarifies certain notions of the *Directive*, it does not answer the questions as to what amount of investment is necessary to meet the requirement of substantial investment and how that might be

measured. The ECJ does not clearly state what would constitute a substantial investment, although the Fixtures decisions make it clear that the presentation and verification of football fixtures would not meet the test of "substantial" investment.[122]

As for the substantial part of the database extracted or reutilized, the ECJ's approach is the following. A quantitatively substantial part of the contents of a database refers to "the volume of data extracted from the database and/or re-utilised and must be assessed in relation to the volume of the contents of the whole of that database."[123] The real problem with a "substantial part" is to determine whether appropriation, even a minimal one, as in *BHB v. Hill*,[124] would amount to a substantial part in a "qualitative" sense. The ECJ stated:

> [S]ubstantial part, evaluated qualitatively, of the contents of a database refers to the scale of the investment in the obtaining, verification,or presentation of the contents of the subject of the act of extraction and/or re-utilisation, regardless of whether that subject represents a quantitatively substantial part of the general contents of the protected database. A quantitatively negligible part of the contents of a database may in fact represent, in terms of obtaining, verification or presentation, significant human, technical or financial investment.[125]

The paragraph quoted above suggests that the extraction of only a few data could amount to database right infringement insofar as obtaining the data required substantial "qualitative" investment, a term used and, as it has been mentioned above, not actually defined in the ECJ judgments. As Maskus and Hugenholtz conclude, "'[q]ualitative investment is, indeed, a rather dangerous notion." [126]

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[122] *Fixtures v. Oy Veikkaus, supra* note 102 at paras. 45-47.
[123] *BHB v. Hill, supra* note 103 at para. 70.
[124] *Ibid.*, at para. 74.
[125] *Ibid.*, at para. 71.
[126] Davison & Hugenholtz, "Football Fixtures", *supra* note 110 at 117.

In the absence of clear criteria of determining "substantial" investment, and with the problems of an actual application of the creating/obtaining approach and determining substantiality of the database part extracted or reutilized, it is certain that a proper application of the *Directive*'s provisions in order to eliminate the threat of *de facto* monopolization of information is a rather challenging task.

The decision of the ECJ in the *BHB v. Hill* case and the decisions in the other three cases mentioned above clarified many important concepts of the *Directive*. However, it was not entirely successful in restricting the scope the *sui generis* rights protection by differentiating created and obtained information. ECJ also issued a controversial judgment suggesting that under the *sui generis* right the owner of a database is entitled to restrain any unauthorized re-use of it under Article 7.1, 7.5 of the *Directive*.[127] In other words, the ECJ judgments reinforced the right of an initial database owner to control (and restrict) the follow-on application by second-comers and following users. With such a control in place, the usage of information itself becomes restricted, and information becomes practically privatized.

The supporters of the *sui generis* right often note that usage of data by including the information in a database does not diminish data and does not deprive others from using it: persons can independently collect data for a rival database, and nothing restricts any person from independently collecting, assembling, or compiling works, data, or

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[127]The *Directive, supra* note 12, Article 7.1: "Member States shall provide for a right for the maker of a database which shows that there has been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents to prevent extraction and/or re-utilization of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database." Article 7.5: "The repeated and systematic extraction and/or re-utilization of insubstantial parts of the contents of the database implying acts which conflict with a normal exploitation of that database or which unreasonably prejudice the legitimate interests of the maker of the database shall not be permitted."

materials from sources other than a database subject to the *Directive*.[128] Unfortunately, a separate non-protected source for the data or documents is frequently unavailable. In cases where there is a sole source of data, the danger of monopolization of information is especially high. Even with the creating/obtaining restriction imposed by the ECJ, the sole-source database owner can still claim the *sui generis* right protection by showing substantial investment in *presenting* data. In such circumstances and in light of the ECJ judgments in the cases discussed earlier, no competitor will be allowed to use available data to create similar or even value-added products, unless the owner of the initial database agrees to give a license. But there is no regime of compulsory licensing[129] in the *Directive*. The First Proposal of the *Directive* provided for such a scheme, but was eliminated in the final version of the *Directive*.[130] The absence of compulsory licensing regime is a significant flaw of the *Directive*. As Davidson and Hugenholtz note, the presence of a compulsory licensing regime could "cure the anticompetitive effects of 'sole-source' information monopolies, such as those exercised by BHB and Fixtures."[131]

Even if an alternative source of information is available, sending a second-comer to collect independently information that already exists in order to use it in its own production is not the best policy: it is a waste, for it means spending a lot of resources for the regeneration of pre-existing data. The significant expenses required for independent collection of information may discourage some from engaging in business after all. The

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[128] Love, *supra* note 31.
[129] A regime of compulsory licensing is a statutory exemption to exclusive rights, an obligation of the right holder to grant use to the state and others. Usually, the holder is entitled to some royalties set by law or arbitration.
[130] EC, *Proposal for a Council Directive on the Legal Protection of Databases*, (COM(92)24 final, Brussels, 13 May 1992), [1992] O.J. C156/4.
[131] Davison & Hugenholtz, "Football Fixtures", *supra* note 110 at 115.

underuse of a resource produces waste; and waste means violation of the spoilage proviso.

With no compulsory licensing regime and with the *sui generis* right in place, commercial utilization of data that used to be freely available to anyone who wanted to collect it is no longer available; competition, particularly in the areas with sole-source information monopolies, is severely restricted, which results in the decreased number of new databases produced; and, finally, *de facto* monopolization of information takes place. This situation certainly does not fit the description of the "sufficiency" proviso "as much and as good left as before."

Outside of the E.U. jurisdiction, the approach to the protection of databases that do not require specific skill and judgment for the selection or arrangement of its content is different. For example, in a somewhat similar U.S. *Feist Publications Inc. v. Rural Telephone Services Co.* (*Feist*) case[132] regarding copyright protection of databases, the U.S. Supreme Court took the following approach. Rural Telephone Service Company, Inc. (Rural) provided telephone service to several communities in northwest Kansas and published a telephone directory that consisted of white and yellow pages. Feist Publications, Inc. (Feist), a publishing company, specialized in area-wide telephone directories that covered a much larger geographic range than Rural's directories. When Rural refused to license its white pages listings to Feist, Feist extracted the listings it needed from Rural's directory without the latter's consent. Rural sued for copyright infringement. The Court held that the names, towns, and telephone numbers copied by Feist were not original to Rural and, therefore, were not protected by the copyright in

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[132] *Feist Publications Inc. v. Rural Telephone Services Co.*, 499 US 340 (1991).

Rural's combined white and yellow pages directory.[133] The Court reasoned that Rural's white pages did not satisfy the minimum constitutional standards for copyright protection because the information they contained lacked the requisite originality, as Rural had selected, coordinated, and arranged the uncopyrightable facts in a mechanical, not creative or original way that would transform obvious selection into copyrightable expression[134] The fact that Rural spent considerable time and money collecting the data was irrelevant to copyright law. Because Rural's white pages lacked the requisite of originality, Feist's use of the listings did not constitute infringement.[135]

To conclude: generally, Locke's labor theory is not convincing as applied to database protection. A minimum amount of unskilled labor can theoretically entitle a person to property rights in the results of such labor provided that there is no waste and there is enough left for other, but that is not the case with non-original databases. The *sui generis* right is inconsistent with the "sufficiency" and "spoilage" provisos of Locke's labor theory. Excessive *sui generis* right protection and its overlap with copyright produce social waste in the form of underuse. Also, while the inclusion of data into a database leaves as much data available for the public, in practice, as it has been illustrated above with the ECJ, interpretation of the *sui generis* right in the *Directive*'s jurisdiction, leads to the restricted access to and commercial use of this data and, thus, facilitates monopolization of data.

The tendency of *de facto* monopolization of information through prohibition of re-utilization of the same data by second-comers creates artificial scarcity of the information, impedes production and exchange of knowledge, facilitates the development

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[133] *Ibid.*, at para. 54.
[134] *Ibid.*, at paras. 50-53.
[135] *Ibid.*, at para. 55.

of anti-competitive practices and informational monopolies, and leads to *de facto* privatization of data. Not just Locke's "sufficiency" proviso but also long-standing traditions of IP to keep mere facts in the public domain so that everyone can use them freely are violated.

II. Social Production Theory

The major work in the area of social production belongs to Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom,*[136] in which the author discusses how the Internet leads to new forms of collaboration among people and challenges the standard utilitarian argument that without payment there is no incentive to produce. The main idea of his work is that technology is changing the nature of economic production of informational goods from an industrial model based on capital to a non-market networked production, characterized by the collaboration of individuals on a voluntary basis and with nonproprietary motivation. While Benkler's work is being vigorously criticized by some[137] and sincerely admired by others,[138] this paper will not engage in the debate over the validity of Benkler's arguments and ideas; neither will it restate the main points of his very extensive work. Only the issues that are relevant to the *sui generis* right discussion will be briefly elaborated.

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[136] Yochai Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (New Haven and London: Yale University Press, 2006) [Benkler].

[137] See e.g. Nicolas Carr, "Calacanis's Wallet and the Web 2.0 dream" *Nicolas Carr's blog* (19 July 2006), online: Rough Type <http://www.roughtype.com/archives/2006/07/jason_calacanis.php>; Paul Duguid, "Netizens Awake" *Times Online* (7 Jule 2006), online: Times Online <http://www.timesonline.co.uk/tol/incomingFeeds/article686580.ece>.

[138] See e.g. Paul Miller, "Net Gains", *The Financial Times* (7 July 2006, 13:12), online: The Financial Times <http://www.ft.com/cms/s/2dd72ff4-0cbb-11db-84fd-0000779e2340.html>; Kenneth Cukier, "Power to the people" *New Statesman* (4 September 2006), online: NewStatesman <http://www.newstatesman.com/200609040057>; Gigi Sohn, "The Wealth of Network" *Public Knowledge Advocacy Group* (3 October 2006), online: Public Knowledge <http://www.publicknowledge.org/node/669>.

Benkler states that digital networks and the willingness of individuals to engage in collaborative projects (peer production) with little or no financial incentive is a new emerging way of production of IP content.[139] He argues that the social production system in certain cases can be even more effective than market-based systems to motivate and allocate both human creative effort and excess capacity that typify the networked information economy.[140] Wikipedia is an example of such collaboration. Wikipedia is a multilingual, web-based, free content encyclopedia project that is written collaboratively by volunteers from all around the world.[141] With rare exceptions, its articles can be edited by anyone with access to the Internet. The Wikipedia community is largely self-organising, so that anyone may build a reputation as a competent editor and become involved in any role they may choose, subject to peer approval. Individuals may add information, cross-references or citations, as long as they do so within Wikipedia's editing policies and to an appropriate standard. They may also choose to become involved in specialised tasks, such as reviewing articles at others' request, watching current edits for vandalism, and watching newly created articles for quality control purposes. There are several mechanisms in place to help Wikipedia members carry out their work of crafting a high-quality resource while maintaining civility. Besides peer reviews, over a thousand administrators with special powers ensure that behavior conforms to Wikipedia guidelines and policies.[142] When a few situations are still unresolved after all other consensus remedies have failed, an arbitration committee steps

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[139] Benkler, *supra* note 137 at 99-106.
[140] Ibid., at 111-115.
[141] "Wikipedia: About", online: Wikipedia <http://en.wikipedia.org/wiki/Wikipedia:About> ["Wikipedia: About"].
[142] *Wikipedia: Policies and Guidelines*, online: Wikipedia <http://en.wikipedia.org/wiki/Wikipedia:Policies_and_guidelines>.

in and decides to withdraw or restrict editing privileges or take other corrective measures.[143] All those activities are voluntary; yet, the popularity of the Wikipedia is significant, and the absence of financial incentive does not impede its development.

Benkler thinks that social production has a potential of eventually replacing existing mechanisms of IP regulations in certain areas. He also suggests that current IP law may be too strong to encourage optimal innovations[144] and notes:

> [T]he efficiency of regulating information, knowledge, and cultural production through copyright and patent is not only theoretically ambiguous, it also lacks empirical basis... The evidence provides little basis to support stronger and increasing exclusive rights of the type we saw in the last two and a half decades of the twentieth century.[145]

It is important to keep in mind that many forms of social production that Benkler uses as examples (like Wikipedia) are databases according to the definition given in the *Directive* and the *WIPO Database Treaty Draft*. Perhaps social production may have the greatest impact on the production of databases. Databases like Wikipedia are the result of social collaboration. They are expanding and gaining world wide recognition as people voluntarily contribute to their further development. These databases have no legal protection, yet this does not discourage people from participating in these projects.

While a *sui generis* right is aimed at the creation of economic incentive to innovate, social production theory demonstrates that economic incentive is not the only mechanism of stimulating the creation of IP products. Based on social production theory, one may suggest that generation of database information through social collaboration can be at least as effective as with the economic incentive. If that is truly the case, then in

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[143] "Wikipedia: About", *supra* note 141.
[144] Benkler, *supra* note 137 at 39.
[145] *Ibid.*, at 38-39.

terms of social costs social production may seem preferable to the strong *sui generis* right.

III. Utilitarian theory

A. The incentive argument

The most popular justification of a *sui generis* right is based on the utilitarian theory.[146] IP bears two distinctive traits of public goods.[147] First, IP is non-rivalrous, for it may be consumed by one person without preventing simultaneous consumption by others. For example, a poem can be read by many people without reducing the consumption of that good by others; in this sense, it is a non-rivalrous good. Second, IP is non-excludable, which means that it is difficult to exclude or prevent any individuals from consuming the good. A street sign and a traffic light are good illustrations of non-excludability: it is virtually impossible to limit their use to few persons and try to prevent others from looking at them too. The non-rivalrous and non-excludable nature of IP together with the development of digital technology that allows easy copying of IP objects lead to a free-rider problem, when IP objects are used by competitors who have not borne any cost of creating the property. It is argued that in such a situation, when free riders can take advantage of the IP products of others, the incentive to create IP without

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[146] Economic arguments for the IP protection are elaborated in several works of Richard A. Posner & William M. Landes, "An Economic Analysis of Copyright Law" (1989) 18:2 *J. Legal Stud.* 325; Richard A. Posner & William M. Landes, *The Economic Structure of Intellectual Property Law* (Cambridge, Massachusetts, and London, England: The Belknap Press of Harvard University Press, 2003) [Landes & Posner, *The economic structure*].

[147] There is no commonly acceptable definition of a public good. It is generally agreed that a public good is something that is regarded as beneficial and can be provided to everyone who seeks it, without their use of it diminishing its value or preventing the use of it by others. Common examples of public goods include defense and law enforcement, public fireworks, lighthouses, street lights, clean air, and information goods.

legal protection against copying will be undermined.[148] In order to keep the incentive and maintain production of IP products, defined property rights in information should be provided.[149]

The incentive argument is an important part of the utilitarian theory, and it is frequently used to justify the need for strong IP protection. The basic rationale here, as Boyle puts it (somewhat too simplistically), is: "If you give me a larger right, I will have a larger incentive to innovate. Thus the bigger the rights, the more innovation we will get."[150] The "more is better" argument has been challenged on various grounds[151] before it was ever applied to non-original databases. The need for property rights in information is challenged by the arguments that "copyrighting the alphabet will not produce more books, patenting E=MC2 will not yield more scientific innovation",[152] and that, besides incentive, IP also provides serious barriers to innovation. The whole concept of the incentive is challenged by the suggestions that human nature would lead to the production of creative works even without economic or legal incentives.[153] The incentive argument is popular, but it has one major weakness: it is based on the "*belief* that appropriate economic and legal institutions do provide incentives… to create and distribute…products and services."[154] This hypothetical assumption may be right; however, it has no empirical evidence to support it. And, until the incentive argument is

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[148] Landes & Posner, *The Economic Structure*, *supra* note 146 at 11.
[149] Keith Maskus, *IPRs in the Global Economy* (Washington D.C.: Institute for International Economics, 2000) at 28-29 [Maskus, *IPRs*].
[150] Boyle, "A Natural Experiment", *supra* note 38.
[151] See, for example, a detailed analytical argument against the incentive-based argument by Adam Moore, *supra* note 88.
[152] Boyle, "A Natural Experiment", *supra* note 38.
[153] See, for example, social production theory in chapter 3, section II, *supra*.
[154] Yale M. Braunstein, "Economic Impact of Database Protection in Developing Countries and Countries in Transition" (Study prepared for the Standing Committee on Copyright and Related Rights, WIPO, 13-17 May 2002), online: WIPO <http://www.wipo.int/edocs/mdocs/copyright/en/sccr_7/sccr_7_2.pdf> [Braunstein].

proven with some convincing evidence, it should be approached and applied with caution.

A similar problem exists in the area of database protection. There is no certainty whether legal protection of databases will stimulate the development of the database market; there are assumptions that it will, but, nonetheless, they remain hypothetical and are not supported by the empirical evidence. [155] Boyle is correct, indeed, when he says: "empirical emptiness of the debate is frustrating".[156] However, at this time, some data regarding the impact of the legal protection of non-original databases has become available. This empirical evidence may add to the debate in favor of or against the incentive claim in the sphere of non-original database protection.

Until recently, the only evidence against the incentive claim regarding databases was derived somewhat loosely from observations and common sense conclusions. For instance, several owners of major non-original databases established or expanded their businesses in the U.S. after the *Feist* case rejected the "sweat of the brow"[157] approach as a reason to grant IP protection. According to the utilitarian rationale, after the *Feist* case the owners of databases had no incentive to create, maintain, and update their databases, for they could not count on IP protection in the U.S. And yet, Thompson, one of the proponents of strong database protection, made key acquisitions in the U.S. legal

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[155] *WIPO Database Treaty Draft, supra* note 13, the Preamble states: "Desiring to enhance and stimulate the production, distribution and international trade in databases…" Submission from the European Community and its Member States on the legal protection of databases states: "Meaningful intellectual property protection for databases is needed in our view to promote innovation and investment in information products. It provides the incentive for disseminating a large variety of new on-line and off-line compilations… Legal certainty allows healthy development of the database sector…"

[156] Boyle, "A Natural Experiment", *supra* note 38.

[157] Perhaps, the lowest standard of originality that is required from a work to be protected under copyright. The author of the work needs only to demonstrate that she has put a significant effort into creating the work; creativity is not required. Such approach is typical for the U.K. copyright system (before the *Directive* was implemented), Malaysia, and Australia.

database market after the *Feist* case.[158] Other proponents of strong database protection, two major on-line businesses, E-bay and Amazon, were founded in 1995, also after the *Feist* case. Apparently, stronger legal protection was not the only incentive that drove major database producers like E-bay and Thompson. Of course, such conclusions were based on a very limited study, and for a long time there was no other evidence available. But enactment of the *Directive* over a decade ago provided a useful object for observations of practical implementation of the *sui generis* right. So, by now, certain tendencies of the influence of the *sui generis* right on the database market of the E.U. have been revealed, and certain conclusions can be made. In particular, it may be possible now to find evidence to prove that the *Directive*'s enactment and introduction of the *sui generis* right became a significant incentive to database makers and thus caused growth in the European database industry.

Two studies of the *Directive* have been conducted since the *Directive*'s enactment: the official EC's Evaluation of the *Directive* from 2005,[159] (Evaluation) and "[t]he most comprehensive empirical survey to date of the impact of the *Directive* on investment in databases",[160] a report by Steven Maurer to Industry Canada of 2001.[161] The findings of both studies are very similar. Maurer's study of the *sui generis* right in

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[158] Thomson acquired Information Access Company, a U.S. provider of broad-based reference and database services in 1994; the Medstat Group, a U.S. provider of healthcare information databases and decision support software in 1994; Peterson's, a leading provider of information about U.S. colleges and universities in 1995; and West Publishing, a leading U.S. provider of legal information in 1996.

[159] "First Evaluation of *Directive 96/9/EC on the Legal Protection of Databases*" (DG Internal Market and Services Working Paper, Brussels, 12 December 2005), online: The Internal Market site of the European Commission < http://ec.europa.eu/internal_market/copyright/docs/databases/evaluation_report_en.pdf > ["Evaluation"].

[160] Davison, *supra* note 19 at 263.

[161] Maurer, *supra* note 73.

Europe[162] has the following findings: during its first year, the new *sui generis* right produced a one-time boost in database production and in the number of new firms entering the industry.[163] However, since 1999 growth rates have returned to previous levels.[164] As of 2001, the number of entrants in the European database market had returned to pre-1998 levels.[165] That makes the 1998 spike look like a one-time event, for the long-term growth pattern has not changed.[166]

This last conclusion was later supported by the data, collected for the first evaluation of the *Directive*.[167] The results of the Evaluation show that E.U. database production in 2004 has fallen back to the pre-*Directive* levels: the number of the E.U.-based database "entries" was 3095 in 2004 as compared to 3092 in 1998.[168] Maurer concludes that there is no evidence that the *Directive* has had a significant incentive-

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[162] Maurer's extensive original research is based on (i) a detailed quantities comparison of 1164 database providers that operated in Canada, the United States, the United Kingdom, Germany, and France between 1993 and 2001, (ii) extended interviews with academic scholars, officials, practicing lawyers and business executives who have first-hand knowledge of European database issues, and (iii) the first published attempt to find out whether the *sui generis* right has had a quantitative impact on European database production. It profiles existing database industries in Canada, the United States, Britain, France, and Germany; it summarizes the current legal environment in North America and Europe; and it tests the claim that the *Directive* has resulted in increased database protection in Europe.

[163] Maurer, *supra* note 73 at 13-2.

[164] *Ibid.*

[165] *Ibid.*, at 13-48.

[166] *Ibid.*

[167] "Evaluation", *supra* note 159 at para. 1.3 describes the methodology: the evaluation was conducted on the basis of a restricted on-line survey addressed to 500 European companies and organizations involved in the database industry – publishers, suppliers of data and information, database manufacturers, distributors, etc., carried out by the European Commission's Internal Market and Services Directorate General in August and September 2005 and information received from the Gale Directory of Databases (GDD), the largest existing database directory which contains statistics indicating growth of the global database industry since the 1970s. Individual rightholder views expressed outside the survey have also been taken into account. James Boyle, "Two Database Cheers", *supra* note 38, makes an interesting comment regarding the methodology of the *Directive's* Evaluation: "The Commission coupled its empirical study … with another intriguing kind of empiricism. It set out a questionnaire to the European industry asking if they liked their IPR … 'What is your emotional relationship with your monopoly?' 'I really like it!' 'Do you think it hurts competition?' 'Not at all!' … Yet the report sometimes juxtaposes the two studies as if they were of equivalent worth". While the conclusions based on the gathered evidence show that there is no proved positive effect of the *sui generis* right on the database market, the opinions of the database producers who strongly support a *sui generis* right and feel that it benefits their businesses, are mentioned several times in the "Evaluation".

[168] "Evaluation", *supra* note 159 at para.1.4.

increasing effect and persuaded providers to create new databases that would not otherwise exist. A *sui generis* right is mainly used as an extra layer of protection for existing products.[169] The Evaluation reaches a similar conclusion: "The economic impact of the '*sui generis*' right to database production is unproven. Introduced to stimulate the production of databases in Europe, the new instrument has had no proven impact on the production of databases."[170]

While most scholars agree that IP protection has an incentive creating effect, "disagreement is significant as regard the size of that effect."[171] Both empirical studies found no hard evidence that the incentive provided by the *Directive* led to a substantial growth of the database market. Thus, based on the evidence currently available, one can suggest that since the *sui generis* right does not stimulate the production of databases, the presumption should be against creating a new legalized monopoly.[172]

B. Costs of database protection

Another matter that should be considered in the debate over the justification of *sui generis* protection is the cost of this new IP right. As Bagby notes regarding the practical consequences of the implementation of the *sui generis* right, "[t]he ultimate question is whether the benefits of new or expanded IPRs will offset their costs."[173] Landes and Posner in *The Economic Structure of the Intellectual Property law* refer to four types of IP costs: rent seeking, loss of public good benefit, transaction costs, and costs of

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[169] Maurer, *supra* note 73 at 13-45.
[170] "Evaluation", *supra* note 159 at para.1.4.
[171] Thomas Riis, "Economic Impact of the Protection of Unoriginal Databases in Developing Countries and Countries in Transition" (Study prepared for the Standing Committee on Copyright and Related Rights, WIPO, 13-17 May 2002), online: WIPO <http://www.wipo.int/edocs/mdocs/copyright/en/sccr_7/sccr_7_4.pdf> [Riis].
[172] Boyle, "A Natural Experiment", *supra* note 38.
[173] Bagby, *supra* note 20.

enforcing the rights.[174] In the next part of the paper all four types of IP costs will be applied to the *sui generis* right to demonstrate that the new right actually increases all of them. The outcome of the analysis below is that utilitarian theory can hardly justify the necessity of the *sui generis* right if the new right imposes such high costs of database protection and leads to various negative consequences including further monopolization of the information.

(i) Rent seeking

Rent seeking occurs when an individual, organization, or firm seeks to make money by manipulating the economic environment rather than by making a profit through trade and production of wealth.[175] In the IP context, rent seeking is an activity, where skills and resources are invested in obtaining or keeping the competitive advantage by turning the innovation into a monopoly, either through various forms of legal exclusion or by making it very hard for competitors to imitate and reproduce the good.[176]

Rent seeking generally implies the extraction of uncompensated value without making any contribution to productivity. Landes and Posner give an example of a sunken ship with a salvage value of $1 million and the costs of realization of $100,000. The potential gain to the salvager is thus $900,000 if a property right in the ship can be acquired. Since the gain is so significant, a competition to acquire the property right in order to realize this gain can be fierce, and it can gobble up most of the potential rent,

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[174] Landes & Posner, *The economic Structure*, *supra* note 146 at 11-36.
[175] James Surowiecki, "Rent-Seekers", *The New Yorker* (13 August 2007), online: The New Yorker < http://www.newyorker.com/talk/financial/2007/08/13/070813ta_talk_surowiecki>.
[176] Michelle Doldrin & David K. Levine, "Rent Seeking and Innovation", University of Minnesota and UCLA (13 July 2003), online: Economic and Game Theory <http://levine.sscnet.ucla.edu/papers/cr35.pdf>.

transforming it into a deadweight social loss.[177] "The legal protection of IP gives rise to serious problems of rent seeking because intellectual goods are waiting … to be discovered, just like a sunken ship."[178] The prospects of monopoly pricing derived from IPRs lead to such a scale of investment in producing knowledge that much of the potential rent will be consumed by the excessive investment. The latter, "minus any social benefit produced by the additional investment, is the waste produced by rent seeking."[179]

The database market fosters rent seeking behavior of its participants. This is how it works. The database owners are higly interested in securing their informational monopoly and establishing a dominant position on the database market in order to gain maximum economic rent.[180] The specific feature of the database market is such that creation of certain databases, while not preventing others from making an identical database independently, makes it economically inefficient to produce similar databases and, thus, is favorable to establishing *de facto* natural monopolies on the database market. The analysis of the database market suggests that the establishment of such *de facto* monopolies is more likely to happen in the following cases: when the database is the first one in the area in question,[181] when the first comprehensive database eliminates the need

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[177] Landes & Posner, *Economic Structure*, *supra* note 146 at 17.
[178] *Ibid.*, at 18.
[179] *Ibid.*
[180] *Ibid.*, at 17. Economic rent is a return over and above the cost of generating the return; it is pure profit.
[181] Numerous databases in the field of natural science compiled observations of natural phenomena that are time-dependent or even one-time natural event dependent and thus are inherently unique. Others include information about individual research activities, which makes them unique as well. For example, the Geological Survey of Canada (GSC) Expedition Database (ED) contains information and data related to the scientific cruises conducted by or on behalf of GSC Atlantic and Pacific. ED contains information on the 'Stations' conducted and seismic geophysical data collected and associated with each individual cruise. Due to the uniqueness of the information, the value-added product cannot be created. There is also no demand on the market for the second database that includes the exact same information. So, with no competition in the area, the owner of the database that contains such information becomes the *de facto* monopolist.

for the analogous databases,[182] when a producer of the database is the sole-source information provider herself,[183] or when she happens to have exclusive access to the only source of a certain kind of information, and no one else can create a similar database because there is no access to the initial raw data.[184]

The cases that imply the exclusive access to a certain kind of information are very attractive to the database owners. They frequently attempt to create such conditions artificially and then to capture special privileges granted by the exclusivity of the information. That task is achieved when the database owner secures exclusive contractual rights from various suppliers of the information in the database. [185] In such cases, it is impossible for a later competitor to acquire that information directly from those suppliers without the suppliers breaching the existing contracts. This way the database owner decreases potential competition and, thus, generates more income not by contributing to

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[182] For example, the Bibliography of the History of Art, published by the Getty Research Institute of the J. Paul Getty Trust and the French Institut de l'Information Scientifique et Technique du Centre National de la Recherche Scientifique, is the most comprehensive art bibliography available worldwide, covering European and American visual arts from late antiquity to the present. While regional or topical databases can be created, it makes no economic sense to create another worldwide comprehensive database, for there is no market demand for it.

[183] Discussion regarding sole-source databases can be found *supra*, at 26-36.

[184] For example, Base Solaire Sol 2000 contains full disk archives and distributes French groundbased solar observations provided by various instruments: the THEMIS telescop, the RadioHéliographe and Réseau Décamétrique of Nancay, the SpectroHéliographe of Meudon, and the Coronographe of Pic du Midi. National Oceanic and Atmospheric Administration Satellite Active Archive includes all data from U.S. polar-orbiting environmental satellites. In a sense, these are sole-source databases.

[185] Database owners of medical and legal journals and many other databases, acquire an assignment of copyright in each individual article before publishing and placing it in a database or otherwise prohibits the supplier of the information from sharing this information with a third party. For example, *Theory & Psychology*, a bi-monthly journal of Department of Physiology of the University of Calgary in part 1 of the Conditions for Publication for Copyright owner states: "It is the journal's policy to acquire copyright on all contributions. There are two reasons for this: (a) ownership of copyright by the publisher ensures maximum protection against infringement of copyright protected material thought breach of copyright or piracy anywhere in the world; (b) it also ensures that requests by third parties to reprint or reproduce a contribution, or part of it in any format, are handled efficiently in accordance with our general policy which encourages dissemination of knowledge inside the framework of copyright." While the stated purpose is the dissemination of knowledge, it is obvious that it is in the publisher's power to reject a request for reproduction of the material if it chooses to do so. Similar requirements can be found in British Human-Computer Interaction Group, American Library Association, Blackwell Publishing Ltd., etc.

its own productivity, but by excluding others from using information that is intended to be publicly available.

Another aspect of rent seeking practice is that database owners invest more resources in obtaining rights in relation to the acquisition of the information in their databases. As a result, excessive investment in obtaining rights consumes part of potential rent and creates social waste. Besides, database owners who spend a lot on acquiring the rights tend to invest less in the databases themselves, in the actual selection and arrangement of contents creatively[186] in a manner that suits the database users' need.

Additionally, since the nature of the database market, as it has been discussed above, is favorable to the creation of the databases that become natural monopolies, the race to be the first one to create a certain database that can take dominant position on the market, can be fierce. The danger of such practice is analogous to those discussed above: considerable resources will be invested (and consumed) in winning the race instead of producing a high quality database. Also, resources invested in such races consume many benefits of granting the exclusive right in the first place. After winning the race, the owner of the database has very little motivation to invest more resources in the further development of the product, simply because she already gained the maximum benefit from winning the race and becoming *de facto* monopolist; further improvement of the product will require investment of resources, but in terms of financial return it may not make a difference significant enough to make the database owner engage in this activity in the first place. As a result, consumers may end up with a lower quality product.

Finally, monopoly profits are not available in most endeavors, so the prospect of obtaining such profits (as those available on a database market) "attracts into the creation

[186] For more on this issue see Sanks, *supra* note 21 at 1010.

of IP resources that might be socially more productive in more competitive sectors of the economy."[187] Rent seeking practices on the database market, constant expansion of existing IP rights and introduction of new exclusive rights, such as the *sui generis* right, facilitate the creation of "inexorable market incentives for the transfer of public information into the hands of private companies."[188] Economic gains from the commercial usage of such databases look particularly attractive.

The database protection provisions assume that all types of information are entitled to equal and similar protection and also assume that once the threshold for protection is met, there is no proportionality for the extent of protection provided.[189] However, the *Directive*, establishing equal types of protection for all non-original databases, fails to differentiate commercial databases (databases produced by commercial enterprises to meet the demand of the market and to yield an interest on the investment of the database producer[190]) and information infrastructure databases (databases that provide information crucial to the working of society, such as collection of stock and currency quotations for the functioning of efficient financial markets[191]). Since the *Directive* fails to make such a distinction among databases (or among types of information), hypothetically informational infrastructure databases can be transferred into the hands of the private owners who can then claim strict protection under the *sui generis* right. This has not happened yet, but if it does, the consequences of privatization of information essential to the functioning of society can be devastating. It is essential that

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[187] Landes & Posner, *The Economic Structure*, *supra* note 146 at 22.
[188] Alan D. Sugarman, "Database Protection - Tilting the Copyright Balance: Distorting the Market in Government Information" (18 November 1996), online: HyperLaw, Inc. <http://www.hyperlaw.com/dbprot1.htm>.
[189] *Ibid.*
[190] Riis, *supra* note 171 at 9.
[191] *Ibid.*, at 8.

information infrastructure databases are regulated in a way that ensures reasonable access to the information. Under no circumstances should producers of such databases be allowed to enter the market of commercial databases and engage into rent seeking activities in attempt to privatize information.

(ii) Loss of public good benefits

This type of social cost in relation to IP usually refers to the issue of the decrease of the public domain. While there is no commonly acceptable definition of the public domain, for better understanding of the arguments in this paper let us define the public domain as the body of knowledge and information (in particular, creative works and inventions) in relation to which no person or other legal entity can establish or maintain proprietary interests.[192] If a certain work is not in the public domain, most often it is due to IP protection.

Originally IP was crafted as a temporary monopoly that lasts for a limited time. When that period expires, the work enters the public domain where anyone can draw on the materials. In recent years, however, the scope of IP expanded significantly, frequently at the cost of the shrinking public domain, and even entered into new arenas,[193] such as the *sui generis* right in non-original databases. The loss of public goods benefits is particularly important in relation to database protection. The general concern here is that a *sui generis* right would "take a public good – information – and transforms it into a

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[192] *IP Justice Recommendations for a Development Agenda at WIPO* (IP Justice Recommendations for the 2007 WIPO General Assembly on The WIPO Development Agenda 24 September 2007), cluster B, para. 4, online: IP Justice <http://ipjustice.org/wp/2007/09/24/ip_justice_on_wipo_development_agenda_2007/>.
[193] Howard Besser, "IP: The Attack on Public Space in Cyberspace", *IP & New Info Technology* (19 March 2001), online: UCLA Graduate School of Education and Information Studies <http://www.gseis.ucla.edu/~howard/Papers/pw-public-spaces.html>.

private good – a protected database."[194] It is important to remember that the marginal cost of using the information in a database is zero, as there is no direct extra cost associated with permitting others to access and use the information. When people are excluded, that creates a loss or social cost.[195]

Before engaging in the debate over the public good losses from database protection, one should keep in mind that database protection results not only in losses; society benefits from database protection as well. Database owners play an important role in the creation of information by transforming the unprocessed data (which is of little use) into information which, therefore, adds to the public domain. They also play an extremely important role in the distribution of information. However, database protection does result in the loss of public good benefits, and the remainder of this section of the paper is dedicated to the evaluation of those losses.

In order to understand this problem more fully and in order to estimate the losses of public goods from protection of databases more accurately, it is important to be acquainted with the economics of information, particularly, that associated with treating information as a commodity.[196] There is an information production chain that includes information creation (creation, generation and collection), processing, storage, transportation, distribution, destruction, and seeking.[197] At the stage of the creation of information, much of the information is created for a public purpose (legislation, judgments, meteorological information, etc.) often for other than financial motives. For

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[194] Renee Marlin-Bennett, *Knowledge Power: IP, Information and Privacy* (Boulder, London: Lynne Rienner Publishers, 2004) at 115.
[195] Davison, *supra* note 19 at 247.
[196] For more information on this topic see S. Braman, "Defining Information: An Approach for Policy Makers" *Telecommunication Policy* (September 1989) 233.
[197] *Ibid.*

instance, meteorological information is expected to be provided free as part of the public service of the provider. For academic researchers, as Willinsky puts it, it is an "inextricable mix of a right to know and a right to be known [that] drives the academy's knowledge economy."[198] Not only do they not get paid for the publications, they often pay to have their works published.[199] Judges derive their economic rewards from their employment as judges – they do not write their judgments because of any financial return flowing from having them published in Lexis or any other legal database. Database owners take advantage of these different motivations when "they reap the benefits of a mismatch of economic paradigm in which they focus exclusively on the financial returns from their database, while those creating the information do so for reasons largely unrelated to any possible financial return from inclusion of that information in databases."[200]

The statement that database owners exploit the public subsidy of the creation of the information may sound a bit accusatory; after all, the ability to gain benefits from exploitation of the available resources or circumstances is in the nature of free market competition. However, what must be noted here is that inclusion of the information in databases locks it within that database, and users are deprived of free access to the information that used to be in the public domain, available to anyone. So, as Davidson notes, greater protection of databases permits greater capture of the benefits of

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[198] John Willinsky, *The Access Principle: the Case for Open Access to Research and Scholarship* (Cambridge, Massachusetts, London, England: the MIT Press, 2006) at 6 [Willinsky].
[199] Davison, *supra* note 19 at 248 relies on the results of the Survey of Australian Medical Researcher's Usage of and Contribution to Databases undertaken by Keith Akers at June 2000. According to it, 39% of the researchers paid to have their works published, and none were paid for the publication.
[200] *Ibid.*

information creation by its collectors at the expense of the public good in having access to that information.[201]

The circular aspect of the process of information creation has many important implications for the legal protection of it in general and for social costs in particular.[202] Davidson suggests a term "spiral of data and information" to explain a perpetual expansion of data and consequent information and knowledge: users of certain information at the same time can be creators of new information. He concludes that creating a legal incentive for one group may have a negative impact on others and on their contribution to the process of the creation of new information, because excessive protection for database owners may reduce access to data and therefore have a negative impact on the incentive or capacity of those users who are subsequent creators of the information.[203]

The danger of monopolization of information is especially pronounced here. As Maurer states, "all IPRs create monopolies that foster high prices and create artificial scarcity of knowledge. The question is one of degree."[204] Under copyright, the "ideas" that are the fruit of an author's labor go into the public domain, while only the author's particular expression remains the author's to control.[205] The *TRIPS Agreement* makes this distinction universally applicable to all copyrightable works, including such borderline works as computer programs and factual compilations.[206] But a clear cut distinction

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[201] *Ibid.*, at 249.
[202] Owners of databases are not the only creators of information, and users of databases are not only consumers. Users of databases are also often the creators of new data and thus play an important role in the development of new information (see e.g. text on Wikipedia, *supra*, chapter 3, section II, above).
[203] Davison, *supra* note 19 at 252.
[204] Maurer, *supra* note 73 at 13-53.
[205] Edward Samuels, "The Idea-Expression Dichotomy in Copyright Law" (1989) 56 Tenn. L. Rev. 321 at 323 [Samuels].
[206] *TRIPS, supra* note 1, Articles 9.2, 10.1.

between idea and expression is always difficult to establish no matter which type of work is under consideration.[207] It is still unclear whether the idea-expression dichotomy is justified or helpful in deciding cases. Samuels concluded that "the courts continued to embrace the idea-expression dichotomy; they have extended it to explain related copyright problems, which over the years had also led to confusion."[208]

Indeed, before *Feist*, very questionable objects received copyright protection. For example, in the U.S. case *West Publishing v. Mead Data Central*[209] the court found that the page numbers and page breaks of West's case reports was copyrightable expression. Samuels suggests that the idea-expression dichotomy "seems to be an *ex post facto* characterization that justifies an outcome based upon other, more concrete, factors. Thus, if the outcome in a particular case is to be infringement, the work is deemed to be protectable expression; if the outcome is to be non-infringement, then the work is described as an 'idea'."[210]

In the database context the distinction between idea and expression is even more blurred. In addition, the *Directive* itself contains no such distinction. This means that, "in the universe of data generators, there is no evolving public domain substratum from which either research workers or second comers are progressively entitled to withdraw previously generated data without seeking licenses that may or may not be granted."[211]

As Reichman and Samuelson put it:

> The absence of any equivalent to the idea-expression doctrine under the new *sui generis* regime also means that investors, in effect, obtain

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[207] Riis, *supra* note 171 at 15.
[208] Samuels, *supra* note 205 at 323-324.
[209] *West Publishing v. Mead Data Central*, 799 F.2d 1219 (8th Cir. 1986).
[210] Samuels, *supra* note 205 at 324.
[211] J.H. Reichman and P. Samuelson, "Intellectual Property Rights in Data?" (1997) 50:1 Vand. L. Rev. 51 at 104.

> proprietary rights in data as such, a type of ownership that the copyright paradigm expressly precludes. Proponents of the *sui generis* right downplay this finding by insisting that third parties always remain free to generate their own databases. But this opportunity exists only for data that are legally available from public sources and whose cost of independent regeneration is not prohibitively high in relation to the gains expected from the exercise. As for proprietary data not legally available for second comers to exploit, there is no opportunity to avoid the originator's exclusive rights to prevent extraction or re-use of existing data.[212]

The ECJ's attempts to create an alternative variant of idea-expression concept for non-original databases that took the form of distinguishing between created and obtained information did not offer more clarity and did not resolve the problem.[213]

In order to diminish the problem of monopolization of information, multiple agreements and regulations on sharing and open access to data and research results' have been taken by many organizations conducting scientific research. For example, Canadian Institute of Health Research (CIHR) in the Preamble of its *Policy on Access to Research Outputs* states that it has a fundamental interest in ensuring that the findings that result from the research it funds, are available to the widest possible audience, and at the earliest possible opportunity.[214] Similar provisions can be found in the National Institute of Health (NIH) *Statement on Sharing Research Data*,[215] in the Human Genome Organization's (HGO) *Mission Statement*,[216] etc. However, while such policies indeed address the issue of monopolization of information, it is important to remember, that these policies cover only certain types of information, mainly results of the scientific

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[212] *Ibid.*
[213] This issue has been discussed *supra*, at 26-29.
[214] CIHR *Policy Access to Research Outputs*, online: CIHR <http://www.cihr-irsc.gc.ca/e/34846.html>.
[215] NIH, *Statement on Sharing Research Data,* online: NIH < http://grants1.nih.gov/grants/guide/notice-files/NOT-OD-03-032.html>.
[216] HGO, *Mission Statement*, online: HGO <http://www.hugo-international.org/mission.htm>.

research. All other types of information are still exposed to the threat of monopolization, especially with the new *sui generis* right in place.

So, despite the efforts to keep information in public domain, there are still social losses in public goods caused by the *sui generis* right and *de facto* monopolization of information that this right fosters. As the Canadian Association of Research Libraries states in its submission to Industry Canada, what was once a fact, not capable of copyright or *sui generis* protection, will become an item of data, and will be contained in a database and hence potentially capable of protection under copyright or a *sui generis* right; what was once a literary work in the public domain can be collected by an enterprising publisher and included in a protected database; access to what once was government information, collected at public expense might be restricted severely by placement of the information in a protected database.[217] And, even in Europe, the Evaluation of the *Directive* raised a serious issue: "The differentiation between the resources used in the creation of the contents of a database and the obtaining of such data in order to assemble a database demonstrate that the new right comes precariously close to protecting basic information."[218]

So, it is obvious that there are gains and losses of the public good benefit that come with the protection of databases. As Maskus says, "[t]he fundamental trade-off in setting IPRs is inescapable."[219] Thus, it is the task of legislation to model protection of databases in a manner that represents the optimum compromise between public and private interests. In its present form, the *sui generis* right is not striking the right balance

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[217] *Supra* note 74.
[218] "Evaluation Raises Questions", *supra* note 16.
[219] Maskus, *IPRs, supra* note 149 at 29.

between public losses and benefits; in fact, at the moment the losses in public good benefits seem to outweigh the gains significantly.

(iii) Transaction costs[220]

The debate over the transaction costs associated with databases at first glance may seem irrelevant, for it is argued that digital technology actually decreased transaction costs. Many of the databases are in electronic format now. E-commerce has replaced traditional methods of conducting business; therefore, due to the innate features of the digital environment, many commerce-related expenses have been reduced significantly. For example, database owners now can make arrangements for potential users to contract on-line or via "click-on contracts" to access their databases instead of former paper-based, mail, or fax contracts.[221] Digital technology has decreased the transaction costs associated with acquiring licenses to access databases. The claims that transaction costs have been dramatically reduced in the digital environment have grounds and, thus, are correct. But these claims fail to mention that the digital environment and e-commerce reduced *only some* of the traditional transaction costs for databases. *Sui generis* right may produce *new* kind of transactional costs that may appeare due to the overlap with copyright.

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[220] Transaction cost is the cost of providing for some good or service through the market. Most common transaction costs are search and information costs, bargaining and decision costs, and policing and enforcement costs. For more information, see Ronald H. Coase, "The Nature of the Firm", 4:16 *Economica* (November 1937) 386, reprinted in Ronald H. Coase, *The Firm, the Market, and the Law*, (Chicago: University of Chicago Press, 1988) 33, and Thayer Watkins, "The Transaction Cost Approach to the Theory of the Firm", online: San Hose State University <http://www.sjsu.edu/faculty/watkins/coase.htm>.

[221] Almost all major online database providers use click-on contracts now: SSRN, Westlaw, E-bay, Amazon, etc.

As Landes and Posner mention, the problem with the transaction costs in IP comes with the transfer of the right to make copies.[222] This problem takes a specific form in the case of database protection. When one party owns the copyright and another one owns the *sui generis* right, a database user will need the permission of two different legal entities in order to perform basically the same actions in respect of the same database.[223] This is the simplest illustration of the problem that Maurer mentions as one of the probable side effects of the European *Directive* – "increased transactional gridlock due to the so-called "anti-commons" effects."[224]

The problem of the anti-commons is the opposite of "the tragedy of the commons".[225] With the tragedy of the commons, too many are using the available resource while nobody has the right to exclude others, thus, the resource is eventually exhausted from the over-usage. The opposite case is when too many owners have the rights of exclusion and, as a result, the resource is underused – a tragedy of the "anti-commons."[226]

It is important to remember that the anti-commons effect also appears due to the absence of the mechanism of compulsory licensing in the *Directive*.[227] When the database owner's refusal to license its directory is effective, the result may be an anti-commons effect: it may lead to an underuse of the entire block of information contained in various

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[222] Landes & Posner, *Economic Structure, supra* note 146 at 16.
[223] Davison, *supra* note 19 at 255.
[224] Maurer, *supra* note 73 at 13-2.
[225] The term "tragedy of the commons" was first used by William Forster Lloyd in 1883 and popularized by Garrett Hardin in "The Tragedy of the Commons" in Martin S. Stanford &Stanley A. Clayes ed., *Contexts for Composition* 5th ed. (Prentice-Hall, 1979) 415. It refers to a social phenomena that involves a conflict over resources between individual interests and the common good. Free access to and unrestricted demand for a resource ultimately dooms the resource through over-exploitation. This occurs because the benefits of exploitation accrue to individuals, each of which is motivated to maximize his/her own use of the resource, while the costs of exploitation are distributed between all those to whom the resource is available.
[226] M. Heller, "The Tragedy of the Anti-commons: Property in the Transition from Marx to Markets" (1998) 111 *Harv. L.Rev.* 621.
[227] This issue has been discussed above, at 14, 35.

relevant directories.[228] The absence of the mechanism of compulsory licensing in the *Directive* that has been discussed earlier allows database owners to refuse to license third parties for the use of information that is included in their databases. Therefore, the manner in which the *sui generis* right is drafted in the *Directive* may result in increased transactional costs for the usage of databases: it may lead to the underuse of the information, i.e. to produce the anti-commons effect.

(iv) Enforcement costs

Enforcement costs are the costs of protection of the IP. As Landes and Posner note, IP tends to be particularly costly to protect. "An idea or other intellectual product cannot be seen in the way the piece of land can be or described with the precision possible in the map. … To trace the descent of an idea ... is much more difficult."[229]

The enforcement costs of databases are significant, for in order to protect the contents of their databases, database owners use multiple and costly tools that include technical protection: encryptions, maintenance of a password access, etc. One of the arguments of the proponents of *sui generis* protection is related to protection costs: it is claimed that if the *sui generis* right is implemented, the level of protection it grants will eliminate the need for all other previously used forms of protection, for the *sui generis* right protection is more comprehensive that all other protection measures that are at their disposal. They claim the *sui generis* right will replace all existing protective measures, and, thus, the protection costs will be reduced significantly.

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[228] Davison, *supra* note 19 at 256.
[229] Landes & Posner, *Economic Structure, supra* note 146 at 19.

The analysis of the practice of the *Directive* implementation did not find evidence that *sui generis* rights protection actually replaced all other forms of protection and thus reduced enforcement costs. Maurer in his study states that interviews conducted show that firms use database legislation as "an *extra* layer of protection for existing products."[230] Database owners *do not substitute* existing forms of protection with the *sui generis* right protection; they use it *in addition* to the ones that already exist. Therefore, the claim of the database proponents that a *sui generis* right will decrease protection costs is not valid.

It is important to keep in mind that an additional level of database protection provided by the *sui generis* right increases the social costs of database protection. As it has been mentioned earlier, the purpose of IP protection, due to the public-good character of IP, is to prevent misappropriation and exclude free riders.[231] But when the marginal cost of using a resource is zero, excluding someone (the marginal purchaser) from using it by charging a positive price for its use creates "a deadweight loss, in addition to the out-of-pocket cost of enforcing exclusion."[232] This is truly the case with databases, for the marginal cost of using information included in them is zero. And while in case of the physical property the loss is rarely significant, since property rights in physical goods manage scarcity, the IPRs, including a *sui generis* right in databases, *create* scarcity.[233] On the other hand, as mentioned earlier, unless there is a power to exclude, the incentive to create IP products may be impaired.

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[230] Maurer, *supra* note 73 at 13-45.
[231] Landes & Posner, *Economic Structure*, *supra* note 146 at 19.
[232] *Ibid.*, at 20.
[233] *Ibid.*

The issue of the protection costs of databases brings the discussion back to the starting point of the incentive theory, i.e. the access versus incentive tradeoff: "charging a price for public good reduces access to it (a social cost), making it artificially scarce, but increases the incentive to create it in the first place, which is a possibly offsetting social benefit."[234]

IV. Conclusion

Creation of information produces both social benefits and social costs, and it is the goal of an IP system to create an economic system that finds an optimum balance between the costs and the benefits. A mechanism for the optimal protection of non-original databases has not been worked out yet. The idea to protect non-original databases using a *sui generis* right raises numerous concerns regarding the costs of such protection. The limited experience of the E.U. in this area, although showing no substantial harm caused by the *sui generis* protection over the decade of its existence, shows no significant benefits of this protection and, thus, casts doubts on the capacity of a *sui generis* system to outweigh its costs.

The attempts to justify the necessity of this system by the traditional IP theories also supply no convincing arguments. A *sui generis* system, although generally fitting into Locke's labor theory, still raises many questions ranging from the fundamental issue whether this theory is applicable to IP in the first place to the problem of the "sufficiency" proviso that is not sustained in certain cases with databases. The utilitarian incentive theory suffers severely from the lack of empirical evidence, so any arguments it uses to date have not been proven yet. The very limited data available for the *sui generis*

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[234] *Ibid.*, at 20-21.

protection of non-original databases does not seem to support the incentive claim either. Social production theory successfully challenges the traditional utilitarian justification of IP and suggests a new mechanism of the creation of IP products that does not require economic stimulation. This theory certainly cannot be used to even attempt to justify a *sui generis* right.

Therefore, no major IP theory provides a convincing justification for the need for a *sui generis* right protection of non-original databases. In light of this uncertainty, and due to certain problems with the *sui generis* right, some specific to the new right (such a creation/obtaining concept and the concept of the indirect access), and some inherent to copyright (such as idea/expression dichotomy, fair use, substantial taking, etc.), it is questionable whether there is a real need for the *sui generis* protection in the first place. Database owners have enough tools to protect their investments besides a *sui generis* right, [235] and an attempt to obtain an additional, legal one has not been justified or supported by any convincing evidence supplied either by the database owners or by independent research and evaluations. Consequently, the need to have *sui generis* protection at the international level is also questionable.

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[235] Further discussion of this topic will be found *infra* in chapter 4.

Chapter 4

Alternative methods of non-original database protection

A *sui generis* right was introduced as a response to the claims of database producers regarding significant losses in revenues due to a lack of legal protection of their products. However, the necessity of *sui generis* right protection is rather questionable. First of all, even though opponents of the *sui generis* right protection have asked for concrete examples of market failure where a database publisher decided not to develop a product out of fear that the products would receive insufficient IP protection, to date no proof of such loss has been demonstrated.[236] Second, at this time, there are various alternative, non-IPR means available for database producers to protect their product. These mechanisms can protect databases effectively without creating a new legalized monopoly such as the *sui generis* right. While it is not the goal of this paper to provide an extensive overview of multiple alternatives available for database protection, it is still important to know what they are and what their capacity is in fulfilling the task of protection. There two types of alternative methods of database protection: legal and technical, and they will be briefly discussed below.

I. Legal tools

There are several legal regimes, other than a *sui generis* right, that can be used for protection of databases. One regime is *trade secret law*.[237] The definition of a "trade secret" varies in different jurisdictions, but in general a trade secret is not just any information, but a certain type of information. There are distinctive features that allow

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[236] Band & Gowdy, *supra* note 38 at 12.
[237] Lipton, "Balancing Private Rights", *supra* note 75.

information to qualify as a trade secret: the information is not generally known to the relevant portion of the public, it confers some sort of economic benefit on its holders (and this benefit derives specifically from its not being generally known, not just from the value of the information itself), and it is the subject of reasonable efforts to maintain its secrecy.[238] Most courts require only relative, not absolute secrecy.[239] Trade secrets are protected without disclosure of the secret; protection of confidential information allows a perpetual monopoly in secret information. Trade secrets are protected from exploitation by those who: obtain access through improper means, obtain the information from one who they know or should have known gained access through improper means, or breach of a promise to keep the information confidential.[240]

Most countries provide some type of civil and criminal protection against the misappropriation of confidential commercial information, whether by breach of a contract or other wrongful conduct.[241] In the United States, trade secret law is a body of both state and federal law that protects the value of information kept out of the public domain through secrecy and obligations of confidence.[242] Other jurisdictions, such as the United Kingdom, rely more on doctrines like breach of contract and breach of confidence.[243] The main difference is that the United States courts and legislatures treat trade secrets as a form of property that can be appropriated by a wrongdoer and, therefore, trade secrecy is treated as property, while lawmaking bodies of other

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[238] *The Economic Espionage Act of 1996*, 18 USC, §§ 1831-39 (1996) at para. 1839.3.
[239] C. Owen Paepke, "Economic Interpretation of the Misappropriation Doctrine: Common Law Protection for Investment in Innovation" (1987) 2 *High Tech. L.J.* 55 at 65.
[240] Eugene R. Quinn, Jr., "Trade Secret Law & Information", online: IPWatchdog.com, The Source for Intellectual Property News & Information <http://www.ipwatchdog.com/tradesecret.html>.
[241] Robert M. Bryan & John M. Conley, "Database Protection in a Digital World" (1999) 6 *Rich. J. L. & Tech.* 2 at para. 77.
[242] Lipton, "Balancing Private Rights", *supra* note 75 at 42 citing Lynn Sharp Paine, "Trade Secrets and the Justification of IP: a Comment on Hettinger" (1991) 20 *Phil. & Pub. Aff.* 247 at 250-51.
[243] *Ibid.*

jurisdictions base remedies on the nature of the relationship between parties, i.e. protect purely contractual interests.[244]

Trade secret protection of information has certain advantages over other IP laws, because trade secrecy protects a broader array of non-novel information, does not require high standards of inventiveness or originality,[245] and has no limitations on the term of protection. At the same time, distinctive features of trade secrets that have been mentioned above limit the relevance and usefulness of trade secret law in the protection of the content of commercial databases. The purpose of creating a database is to make its content available to members of the public; therefore, materials intended for broad dissemination do not meet the requisite of secrecy. The database creator could seek to maintain secrecy by relying on contracts that prohibit each customer from disclosing the information and require the customer to adopt precautions against disclosure. This method can be effective when the number of customers is small, and customers have no need to share information. However, a complex system with many customers is not really suited to a contracts-based solution because of the high transaction costs involved in making and monitoring each agreement and controlling data exchange between customers.[246] Thus, trade secret law alone is not very effective in protecting non-original databases.

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[244] Jacqueline Lipton, "Protecting valuable commercial information in the digital age: law, policy and practice" (2001) 6 *J.Tech. L. & Pol'y* 2 at para. 2.1.

[245] *Ibid.*

[246] Julie E. Cohen & William M. Martin, "IPRs in data" in Deanna J. Richards, Braden R. Allenby & W. Dale Compton, eds., *Information Systems and the Environment* (The National Academy Press, 2001) 45 at 48 [Cohen & Martin].

Non-original databases can also be protected by *unfair competition law*.[247] The law of unfair competition is mainly comprised of torts that cause an economic injury to a business, through a deceptive or wrongful business practice.[248] Unfair competition can be broken down into two broad categories. First, the term "unfair competition" is used to refer only to those torts that are meant to confuse consumers as to the source of the product; the other category, "unfair trade practices", comprises all other forms of unfair competition.[249] In this context, unfair competition does not refer to the economic harms involving monopolies and antitrust legislation.[250] The most common example of unfair competition is trademark infringement.[251] Another common form of unfair competition is misappropriation that involves the unauthorized use of an intangible asset not protected by trademark or copyright laws.[252] In the case of database protection the latter takes the form of misappropriation of another's database and claiming it as one's own or misappropriation of part of the database content and using it in its own product.

The common law doctrine of misappropriation is "an amorphous tort that is a part of U.S. state unfair competition law"[253] that originated in the 1918 Supreme Court opinion, *International News Service (INS) v. Associated Press (AP)*.[254] AP sued INS for taking its news stories on the east coast and providing them to customers on the west

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[247] G. M. Hunsucker, "The European Database Directive: Regional Stepping Stone to an International Model?" (1997) 7 *Fordham I.P. Media & Ent. L.J.* 697 at 720.
[248] "Unfair Competition" in *WEX*, online: Cornell University Law School at <http://www.law.cornell.edu/wex/index.php/Unfair_competition> ["Unfair Competition" in *WEX*].
[249] *Ibid.*
[250] *Ibid.*
[251] For more information see "Trademark Infringement", online: BitLaw <http://www.bitlaw.com/trademark/infringe.html>.
[252] "Unfair Competition" in *WEX, supra* note 238.
[253] Laura Gasaway, "Databases and the Law" (Paper prepared for Cyberspace Law course at the UNC School of Law for Spring 2006), online: University of North Carolina at Chapel Hill <http://www.unc.edu/courses/2006spring/law/357c/001/projects/dougf/index.html> at para. "Misappropriation" [Gasaway].
[254] *International News Service v. Associated Press*, 248 US 215 (1918), online: FindLaw <http://caselaw.lp.findlaw.com/cgi-bin/getcase.pl?court=US&vol=248&invol=215>.

coast. INS accomplished this by taking advantage of the difference in time zones and using the intervening time to rewrite the news stories and wire them to publishers on the west coast. Since the essential facts were first extracted and articles rewritten, there was no copyright infringement. Nevertheless, the Supreme Court reasoned that the plaintiff had acquired an intangible quasi-property right in the news.[255] The Court granted the relief AP was seeking since the defendants had "misappropriated" the "hot news" generated by AP, and the misappropriation doctrine was born.[256] So, in general, the misappropriation doctrine prevents a person from appropriating information or ideas without permission or without paying for their use. It seems that this doctrine, if applied to non-original databases, could work well. However, it is important to remember that a misappropriation claim is limited to cases where: (i) the plaintiff generates or collects information at some cost or expense; (ii) the value of the information is highly time-sensitive; (iii) the defendant's use of the information constitutes free-riding on the plaintiff's costly efforts to generate or collect it; (iv) the defendant's use of the information is in direct competition with a product or service offered by the plaintiff; and (v) the ability of other parties to free-ride on the efforts of the plaintiff would so reduce the incentive to produce the product or service that its existence or quality would be substantially threatened.[257] Thus, owners of non-original databases in the U.S. can count on this doctrine as a way of protection only if the conditions listed above are met. The second condition, the time-sensitive nature of the information ("hot news" as in *INS v. AP*), is a particular problem with databases: much of the information that is marketed in

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[255] *Ibid.*, at 232, 263.
[256] Michelle L. Spaulding, "The Doctrine of Misappropriation" (21 March 1998), online: The Berkman Center for Internet & Society, Harvard Law School <http://cyber.law.harvard.edu/metaschool/fisher/linking/doctrine/index.html>.
[257] *The National Basketball Association v. Motorola, Inc.*, 105 F.3d 841 (2nd Cir. 1997) at para. 69.

database form lacks this quality.[258] That certainly limits the applicability of this doctrine to the protection of non-original databases.

Doctrines similar to misapproriation exist in other countries. For example, there are trade practices law in Australia, tort and misappropriation law in the Netherlands, marketing practices law in Sweden, and passing-off law in the U.K.[259] According to the Report prepared by the International Association for the Protection of IP for the 39th World IP Congress,[260] in the majority of reporting countries which have a law of unfair competition, this has either no role or only a limited role in the protection of databases (Bulgaria, Canada, Croatia, Egypt, Finland, Hungary, Italy, Japan, Latvia, Romania, and the U.S.).[261] Only some countries (Argentina, Brazil, China, Portugal, and Spain) state that unfair competition law in principle applies to the unauthorised appropriation of databases, but there is no case law; in France, unfair competition law had a role in the protection of databases prior to the enactment of the *sui generis* protection regime; in Germany, unfair competition law has a role in the protection of databases in parallel to a *sui generis* protection.[262]

Contract law is a legal regime that has the biggest potential in protecting non-original databases. An owner of a database can contract with various parties to control the use of its database. The terms of the contract could detail the rights and obligations of the parties and would determine the outcome of any breach.[263] Database owners may provide

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[258] Cohen & Martin, *supra* note 246 at 49.
[259] International Association for the Protection of IP, *Database protection at national and international level* (Summary Report prepared for the 39th World IP Congress in Geneva, Switzerland on 19-23 June 2004), online: International Association for the Protection of IP <http://www.aippi.org/reports/q182/q182_summary_e.pdf > at para. 1.5.1. [IAPIP Report].
[260] *Ibid.*
[261] *Ibid.*
[262] *Ibid.*
[263] Gasaway, *supra* note 253 at para. "Other Potential Forms of Database Protection".

licensing agreements, in the form of shrink-wrap or click-on licenses, where they specify the manner in which the database is used.[264] That is how West Publishing Company protects the content of its WESTLAW database.[265] Another option would be to permit differential pricing: different groups can be granted access to the information contained in the database according to their capacity to pay, their desire for the product, and the use that they will make of the information.[266] For example, a database owner may charge universities, research facilities, small businesses, and corporations different prices. Certainly, contract law also has disadvantages in protecting non-original databases. For example, protection extends only to the contractual relationship between the database owner and the contracting party. If the contracting party releases the information to a third party, the tools of contract law in such a case are not very helpful.[267] Also, contract law by itself does not prevent access to the database by anyone who does not have a contractual right to access (i.e. "hackers"). Technical measures can be more helpful to prevent unauthorized access. Still, contract law has good potential in the protection of non-original databases as long as the database producer can control copies of the database put on the market. Distributing databases via the Internet potentially reduces the ability of the producer to maintain effective control; but that problem may be counterbalanced by technical measures, which provide an important means to maintain control of copies.[268] Therefore, a combination of the technical protective measures with contract law tools may be an advantageous legal regime for the protection of non-original databases.

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[264] *Ibid.*
[265] Sanks, *supra* note 21 at 1008.
[266] Davison, *supra* note19 at 40.
[267] *Ibid.*
[268] Riis, *supra* note 171 at 7.

There are a few other options of database protection that are used in various countries. In Japan legal protection of a database can be afforded on the basis of a damages provision in the Civil Code. Denmark acknowledges the possibility of patenting the structure of a database if in conjunction with a computer it has a technical effect, such as a reduced use of memory or easy access to data.[269]

Finally, in the IP field *copyright* provides solid legal protection of the content of a database. Databases are essentially a form of compilation, and compilations have long been considered as protected.[270] However, copyright protection in a compilation focuses on the original ways in which the preexisting material or data were selected, coordinated, or arranged, and not the data itself.[271] Such requirement is related to the issue of the idea-expression dichotomy that has been discussed earlier. Leaving these considerations aside, it is possible for a database owner to bring the database within the scope of copyright protection. This can be achieved in several ways. One way is to add opinions, abstracts, or other non-fact specific information, as West Publishing does with its headnotes and synopses that are included with the judicial opinions. While this does not create copyright protection for the databases themselves, it may deter copying. Another way is to develop a more creative method of putting the database together to meet the minimum level of creativity (originality) requirements. If such method is chosen, then a database can enjoy reliable copyright protection. However, database owners do not seem eager to implement

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[269] For more information see IAPIP Report, *supra* note 259.
[270] See chapter 1, *supra*, for more on this topic.
[271] *WCT*, *supra* note 1, Article 5 states that "compilations of data or other material, in any form, which by reason of the selection or arrangement of their contents constitute intellectual creations, are protected as such" and particularly specifies: "This protection does not extend to the data or the material itself and is without prejudice to any copyright subsisting in the data or material contained in the compilation."

this option, because it means added costs to the development and because there is no guarantee that this creative approach will actually yield copyright protection.[272]

II. Technical options

The best-known examples of strategies which limit users' access to data in ways that do not rely on contracts, statutes, or courts involve technical protection. With the rapid development of technology various methods are at the disposal of the database owner. Maurer in his study mentions the most common technical strategies.[273] *Submitted queries* are online research tools that require customers to submit search requests and then report back results, like LEXIS does.[274] This tool is useful, because customers never gain access to the underlying database. *Registration* and *monitoring* tools require users to identify themselves and routinely monitor search requests for information.[275] At the moment, *encryption* methods are, probably, the most advanced technological protection method, and they deter unauthorized use of the data.[276] Although encryption methods are not yet sufficiently developed (for now, user-passwords are an option commonly used), they still hold great potential and are the preferred protection method.[277] For example, deploying special viewing devices or programs (encryption schemes) have been proposed for protection of various types of data. In the broadcast industries, there are encryption

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[272] Sanks, *supra* note 21 at 1009-1010.
[273] *Ibid.*, at 13-29.
[274] For example, see Search Page of Lexis/Nexis, online: Lexis/Nexis <http://www.lexisnexis.com/search/search1.asp>.
[275] Maurer, *supra* note 73 at 13-29.
[276] Encryption is the translation of data into a secret code. To read an encrypted file, one must have access to a secret key or password that enables you to decrypt it.
[277] Sanks, *supra* note 21 at 1009.

schemes to control access to Pay-TV services.[278] The DVD industry implements the so-called Content Scrambling System (CSS) to protect the contents of DVD media.[279] Similarly, the music industry is pursuing copy protected CDs that cannot be easily copied.[280] In the electronic publishing world, Adobe Acrobat programs rely on a tool that restricts the ability of users to reproduce or pass on their copies.[281] In the e-commerce and on-line trading communities, alternative schemes are used. These depend on strong authentication techniques to ensure the identity of system users and use various cryptographic technologies (deploying both hardware and software solutions) to maintain the integrity and security of their systems.[282] Similar schemes can be used for the protection of databases and thus protect database publishers' rights without having to resort to excessive perpetual protection.[283] Encryptions play an especially significant role in protecting digital products, including digital databases. The term "technological protection measures (TPMs)" is used to describe a set of technological measures intended to promote the authorized use of digital works.[284] As Kerr says, TPMs operate "as a kind

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[278] Pay-TV services require a subscriber to pay to have the broadcast decrypted for viewing. For more information on Pay-TV services, see Michael Paxton, principal analyst, "In-Depth Analysis: Conditional Access in Pay-TV Markets" (Research Report # IN0603167MBI, January 2007), online: Electronics.ca Publications <http://www.electronics.ca/reports/multimedia/digital_tv.html>.

[279] For more information on CSS see e.g. Gregory Kesden, "Content Scrambling System (CSS): Introduction" (Lecture for the course 15-412 *Operating Systems: Design and Implementation,* 6 December 2000), online: Carnegie Mellon School of Computer Science <http://www.cs.cmu.edu/~dst/DeCSS/Kesden/index.html> [Kesden].

[280] For more on CD/DVD Protections see "CD/DVD Protections: Introductions", online: CD Media World <http://www.cdmediaworld.com/hardware/cdrom/cd_protections.shtml>.

[281] For more information, see "Adobe ADEPT" (updated 30 March 2007), online: Adobe <http://www.adobe.com/products/adept/>.

[282] Sherif El-Kassas, "Study on the Protection of Unoriginal Databases" (Study prepared for the Standing Committee on Copyright and Related Rights, WIPO, 13-17 May 2002), online: WIPO <http://www.wipo.int/edocs/mdocs/copyright/en/sccr_7/sccr_7_3.pdf> at 9-10 [El-Kassas].

[283] *Ibid.*

[284] Ian Kerr, "If Left to Their Own Devices… How DRM and Anti-Circumvention Laws Can Be Used to Hack Privacy" in Michael Geist, ed., *In the public interest: the future of Canadian copyright Law*, (Irwin Law, 2005) at 171 [Kerr].

of 'virtual fence' around digitized content and can therefore be used to lock-up content – whether or not it enjoys copyright protection."[285]

Therefore, legal rights are not the only or even the main method available for database providers to protect their products. But, because the database debate focuses on legislation, participants sometimes assume that formal contracts and statutes are more important than other types of protection. In reality, however, business strategies of the database market players are based on a balanced mix of legal, technical and economic-based strategies.[286] As it is apparent from the discussion above, many methods used as an alternative to IP protection while providing certain advantages, have limitations and are not very useful when applied separately. However, once combined, they may provide effective protection of database content. This approach is being used increasingly with the development of Digital Rights Management (DRM) – a combination of contractual tools with the technological means. The first component of DRM includes the set of technologies (encryption, copy control, digital watermarking, traitor tracing, authentication, access control, etc.) and the second is a set of legal permissions that is typically expressed as a licensing agreement that establishes the terms of use.[287]

DRM is one of the most controversial technologies to come along in recent years. It is being widely criticized for interfering with consumers' lawful use of music, movies, and other copyrighted works, for preventing legitimate fair use (such as making back-ups of DVDs and music downloaded from online stores, recording TV programs, remixing clips of movies into home movies), and for creating severe security vulnerabilities in

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[285] *Ibid.*, at 172.
[286] Maurer, *supra* note 73 at 13-29-13-30.
[287] Kerr, *supra* note 284 at 172-173.

computers.[288] It is also said that DRM threatens users' privileges under copyright by allowing the producers of the products protected under DRM to erode capabilities that were granted to the public by copyright law under fair use doctrine (a statutory exception to the copyright law), that DRM is used by the content owners to control the use of their content, and that DRM technologies can be used for "more nefarious purposes such as infringing on privacy, personal profiling, price discrimination based on personally-identifiable information and stymieing the development of open source software."[289]

However, DRM systems for Office documents and other file formats have been less controversial, and several such systems have been in use for years. For example, Adobe Systems Inc. acquired the DRM business of Navisware in 2006.[290] The FileLine DRM[291] products from Navisware are designed to provide security and version control for CAD, Office, and other file types: Adobe integrated the FileLine technology into its LiveCycle Policy Server offering, which provides document security and other controls for PDFs. This experience is certainly applicable to databases. DRM definitely cannot magically resolve all the issues related to the protection of database content, but carefully drafted DRM solutions can provide a rather high and comprehensive degree of protection, both legal and technical. DRM can enable content authors or companies to establish which users can view a particular file and what actions they can take with the file, such as printing, copying-and-pasting, or e-mailing.

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[288] "Digital Rights Management and Copy Protection Schemes", online: Electronic Frontier Foundation <http://www.eff.org/IP/DRM/>.
[289] "Digital Rights management and Libraries", online: American Library Association <http://www.ala.org/ala/washoff/woissues/copyrightb/digitalrights/digitalrightsmanagement.cfm>.
[290] Dennis Fisher, "Adobe Acquires DRM Technology", *E-week.com* (9 January 2006), online: E-week.com <http://www.eweek.com/article2/0,1895,1909194,00.asp>.
[291] FileLine DRM comprises a client and server, which communicate through an encrypted channel. The system is able to enforce predetermined security policies on a wide variety of documents and also encrypts individual files for added protection.

DRM (i.e. combination of technical and contractual measures of protection) holds great potential for protection of the content of a database, and that is recognized by many major companies. For example, in 2004 IBM, Intel Corp., Microsoft Corp., Matsushita Electric/Panasonic, Sony Corp., and Toshiba Corp. joined The Walt Disney Co. and Warner Bros. Studios to back the "Advanced Access Content System," described as a next-generation version of today's CSS (Content Scrambling System) that protects content found on DVDs.[292] While member companies shied away from the term "DRM," the AACS is basically a new DRM scheme for next-generation content: AACS cryptography is applied at the disc replicator level and an AACS-approved player would then read the disc, applying the appropriate rights limitation. [293]AACS is also interacting with other DRM schemes, such as content protection within a network.[294]

DRM type of protection is capable of creating the most optimal mechanism of the protection of database content. Basically, it can provide database owners with as many opportunities to control the use of their content as a *sui generis* right, but through different means and, most importantly, without creating a new form of IP protection. Therefore, in cases when both technical and legal protection is provided (like with carefully drafted DRM), additional legal protection in forms such as *sui generis* rights protection seems unnecessary.

However, it is important to remember that protection of database content with a complex of technical measures and legal tools, if not carefully drafted, may result in *de facto* much stronger protection than under the *sui generis* right. As it has been mentioned

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[292] Mark Hachman, "Tech, Studio Heavyweights Back New DRM Scheme", *E-week.com* (14 July 2004), online: E-week.com <http://www.eweek.com/article2/0,1895,1623748,00.asp>.
[293] Kesden, *supra* note 279.
[294] *Ibid.*

earlier, the DRM has been criticized for interfering with consumers' lawful use of the contents of protected works, and for preventing legitimate fair use. In the absence of the *sui generis* right protection some database owners in order to protect their products may be tempted to restrict access to their database contents through available technical and legal measures so severely that such measures may have more negative impact than the *sui generis* rights protection.

In summary, there are multiple legal and technical tools available for database owners to protect their products besides IP. Applied separately, they may not always be effective, but when combined they can ensure a sufficient degree of content protection. In addition, database owners can also rely on economic strategies to obtain an additional level of protection of their products. These methods are usually based on the fact that most decision-makers are willing to pay a large premium for timely, accurate data, because the amount of money at stake in most business decisions is typically much larger than the cost of data itself. As Maurer states, this effect is particularly noticeable for high-end products like biology and space imaging, where users routinely pay hundreds of thousands of dollars for comparatively modest improvements over publicly available information. The proposed business strategies rely on such methods as maintaining reputation and updating. Reputation is what suggests trust to the customers – unless they know who gathered and compiled the data, they have no reason to rely on it; updating is a crucial part of conducting business, for most database providers sell updated data to the same consumers year after year.[295] Carefully implemented business strategies can be very advantageous for players in the database market.

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[295] Maurer, *supra* note 73 at 13-30.

Database owners are concerned that the initial costs of implementing the legal, technical, and economic protective devices mentioned above may raise the price of database development and, thus, they ask for *sui generis* rights. However, as Sanks notes, in time these protective mechanisms will be considered part of the cost of doing business.[296] It is a natural desire of a market player to obtain an extra layer of legal protection, but the costs of the *sui generis* right that have been previously discussed and the availability of other effective means of protection cast doubts on the necessity of the creation of a new legalized monopoly – a new IP right for non-original databases.

III. Recommendations for the amendments of the sui generis provisions

If *sui generis* rights protection is to be kept, certain amendments of its provisions are necessary in order to resolve problems associated with the *sui generis* right. Ideally, those amendments should address all the criticism the *Directive* meets, such as vagueness of the notions and definitions, term and the scope of protection, facilitation of the monopolization of information, and others.

Of course, one cannot expect that problems inherent to copyright (such as definition "substantial taking" or idea/expression dichotomy) can be resolved in the *sui generis* right. However, problems specific to the *sui generis* should be addressed. That includes diminishing an opportunity of the sole-sourced database producers to monopolize data, expanding a list of exemptions to the *sui generis* right, changing *de facto* semi-permanent term of protection, and, perhaps, considering an option of implementing a scheme of compulsory licenses.

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[296] Sanks, *supra* note 21 at 1016.

The issue of monopolization of data due to the *sui generis* right protection can be addressed by reformulating the definition of the *sui generis* right in Article 7.1 in a manner that would limit the scope of protection. This task can also be achieved without reformulation of the definition, if the ECJ issued a judgment that would limit the scope of protection. As it has been discussed above, the ECJ attempted to do it by distinguishing created and obtained data and stating that only databases, which content is obtained can be protected under the *sui generis* right. However, database producers who create data can still claim *sui generis* right protection by proving there were substantial investments on their side in presenting data. The ECJ could target that particular issue. That would effectively limit the scope of protection under the *sui generis* right and thus address the problem of monopolization of data by sole-source providers.

The list of exemptions to the *sui generis* right in Article 9 of the *Directive* is criticized for being too restrictive. A solution to this problem would be to expand the list of exemptions to guarantee the fair use of the information for researchers, scientists, libraries, journalists, and others. Copyright can be used as an example for setting new exemptions. Of course, copyright is not an absolute etalon, however, its fair use doctrine proved to be rather effective. Incorporation of positive achievements of copyright into the *sui generis* right seems like a relatively simple solution.

The term of protection is criticized for being in fact semi-permanent. Permanent protection is inconsistent with the original intent of IP. IP is designed as a temporary withdrawal of certain works from the public domain with their return into the public domain after a certain period of time. Under the *sui generis* right regularly updated databases may never enter public domain, for according to Article 10 of the *Directive* the

term of protection of fifteen years starts over with every update, and thus database owners may protect their databases for as long as they need. On one hand, setting a fixed term of, for example fifteen years with no possibility of extension may resolve the issue. On the other hand, throughout this period of time the database owner can invest significant amount of resources in the updates and changes so grand that the end product may be in fact equal to a new database that should be entitled for an independent term of protection. The solution to this issue could be to set the threshold that would distinguish what amount of changes entitles the database owner for the new term of protection. However, this is purely a theoretical solution: establishment of a clear threshold, for example, substantial taking in copyright, proved to be very difficult, if not impossible. For a more practical solution, perhaps, the term of fifteen years can be reduced to, for example, three or five years, so that in order to receive a new term of protection, the database owner would have to make updates and changes into its database more frequently.

Finally, as it has been mentioned above, a scheme of compulsory licensing could address the issue of restricted access to information. With compulsory licensing mechanism in place, there would be no need to reformulate the definition of the *sui generis* right, for a sole-source database producer would have to license its data. Thus, the problem of the monopolization of information and access to data would be resolved.

Chapter 5

Potential implications of the *sui generis* right for developing countries

The tension between stronger IP rights increasing returns to creative activity, but raising the cost of enjoying that activity is illustrated well by the ongoing controversy over the attempts to extend IP protection to databases. While considerable controversy persists over international means of protecting key information technologies, including databases and electronic information transfer, there is nevertheless an evident commitment to achieving strong protection in these areas.[297] Developed countries, the E.U. in particular, and the U.S. lately, strive to protect the investments of firms and researchers in the assembly of data compilations from copying for commercial use by second comers. As Maskus mentions, they go too far – their provisions would extend IP protection to "data compilations that require nothing more than arranging publicly available data into a particular order, thereby protecting material that, under standard interpretation, should not be copyrightable."[298] The multiple implications of such an approach have been discussed in the previous chapters of this work; this chapter is dedicated to the analysis of the specific implications of the protection of non-original databases for developing countries in the event that the *WIPO Database Treaty Draft* that incorporates a database right[299] is adopted.

An international treaty becomes binding on a state only in the case of its ratification (and the treaty enters into force), and theoretically a country is not obliged to

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[297] Keith E. Maskus, "The Role of IPRs in Encouraging Foreign Direct Investments and Technology Transfer" (1998) 9 *Duke J. Comp. & Int'l L. 109* at 109-110 [Maskus, "The Role of IPRs"].
[298] Maskus, *IPRs, supra* note 149 at 61.
[299] Event though the *WIPO Database Treaty Draft* does not use the term "*sui generis* right," it will be used in this paper when referring to a database right of the *WIPO Database Treaty Draft* , for, with the exception of the name, it is exactly the same right as the *sui generis* right of the *Directive*. See chapter 2, section II, above, for more on this topic.

do so. But a decision of a developing country to adjust its IP protection to the international standards is in some cases a product of international and external conditions[300] such as domestic pressure to strengthen or to enforce existing IP laws, pressures of foreign governments demanding strong IP protection, or a combination of both.[301] Thus, while approval of the *WIPO Database Treaty Draft* does not oblige developing countries to adopt and ratify the treaty, they may be strongly advised to do so by the developed countries (which want to ensure proper levels of protection of their assets abroad). And after the adoption of the treaty, they would have to deal with the multiple implications of the implementation of the *sui generis* right.

I. Strong IP and developing countries

Generally, the problem of imposing *sui generis* protection of databases on developing countries is a part of a much bigger issue: will developing countries benefit economically from strengthening their protection of IP? Heated debate over the pros and cons of strong and weak IP rights for developing countries has produced a substantial body of literature, theoretical and empirical, covering economic and legal aspects of IP.[302] It is impossible to summarize even briefly all the main arguments of this complex debate in this paper. Only the general points that are relevant to the course of the discussion will be briefly elaborated below.

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[300] For more on this topic and for historical examples see Hughes, "Political Economies for Harmonization", *supra* note 36.

[301] Robert L. Ostergard, Jr., *The Development Dilemma: The Political Economy of IPRs in the International System* (New York: LFB Scholarly Publishing LLC, 2003) at 61-62 [Ostergard].

[302] For an overview of the relevant literature on this issue see Wolfgang E. Siebeck, ed,, with Robert E. Evenson, William Lesser & Carlos A. Primo Braga "Strengthening Protection of IP in Developing Countries: a Survey of the Literature" (World Bank discussion papers: 112, 1990).

The expansion of the universal, rather high IP standards on a global scale has taken place in the last decades. These standards were incorporated in international treaties like the WTO's *TRIPS*[303] that establishes a global framework of mandatory minimum IP standards for most categories of IP. *TRIPS* was effectively drafted by the developed countries; it reflected their position on IP regulations,[304] and had little regard to the level of development and any other specific social, economic, and political factors that differ from country to country.[305] *TRIPS* had to be accepted by every country wishing to become a WTO member due to the "single undertaking" obligation[306] of the WTO Agreements.[307] So, countries like Taiwan, South Korea, Japan, Thailand, Philippines, China, and others[308] had no choice but to accept high international standards in order to participate equally in international trade by becoming members of the WTO.

A similar scheme of events appears to have happened in the database protection debates of today.[309] The proponents of a strong IP policy state that strong IP protection by

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[303] *Supra* note 1.

[304] Commission on the IPRs, established by the U.K. government, conducted several studies on the IP issues, most relevant to the developing countries. In "Developing Countries and International IP Standard-setting", Peter Drahos concluded that influence of the developing countries in the international IP standard-setting process is comparatively little. The main reason for this, as Drahos concludes, lies in the "continued use of webs of coercion by the U.S. and E.U., both of which remain united on the need for strong global standards of intellectual property protection." For more information, see Peter Drahos, "Developing Countries and International Intellectual Property Standard-setting" (Study paper 8, Commission on IPRs), online: IPR Commission <http://www.iprcommission.org/papers/word/study_papers/sp8_drahos_study.doc>.

[305] Ostergard, *supra* note 299 at 63.

[306] For general information and overview of the single undertaking concept see Michael J. Trebilcock & Robert Howse, *The Regulation of International Trade*, 3rd ed. (London, New York: Routledge, 2005) at 642-643 [Trebilcock & Howse]. For detailed information, historical overview, and thorough analysis see C. Patel, "Single Undertaking: a Straitjacket or Variable Geometry?" (Trade-Related Agenda, Development and Equity (T.R.A.D.E.) Working Paper 15, Geneva, South Centre, May 2003); Andrew Cornford, "Variable Geometry for the WTO: Concept and Precedents" (Discussion paper 171 presented at the UN Conference on Trade and Development, May 2004), online: UNCTAD <http://www.unctad.org/en/docs/osgdp20045_en.pdf>.

[307] Legal texts of the WTO Agreements are available online: WTO <http://www.wto.org/english/docs_e/legal_e/final_e.htm >.

[308] *Ibid.*

[309] Hughes, "Political Economies of Harmonization", *supra* note 36 of at 8.

all countries provides advantages to countries of all sizes and at widely differing stages of economic development.[310] They argue that innovation will disseminate into developing countries through investment and trade gains that result from strong IP protection, and that strong IP protection facilitates trade in goods and foreign investment, because innovators and technology exporters are more willing to invest in and trade with countries that institute strong IP regimes and provide remedies for infringement.[311] It is proposed that developing countries benefit from strong IP protection, for, as a result of it, they will be able to generate new science and technology rather than acquire technology from other states[312] and, thus, they will achieve sufficient growth, relative economic independence, and comparative advantage in the indigenous innovation.

Opponents point at the so-called "development dilemma":

> Developed countries' calls for strong protection are advanced in the name of protecting overseas markets for their industries... The irony is that developed countries promoted policies that are intended to encourage developing countries to open their domestic markets to foreign competitors. The logic behind free trade policies is that every state engaged in trade will benefit. When developing countries have opened their markets, developed countries have applied strong political and economic pressure for developing countries to protect foreign IPRs. These pressures have produced the odd scenario of developing countries financing and promoting the economic growth of developed countries.[313]

Also, pushing uniform IP standards on countries of all levels of development has another flaw. As Riis justly notes, there is no reason to believe that economic conditions are similar in different countries and particularly not in developing countries, on the one

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[310] Braunstein, *supra* note 154 at 27.
[311] For more information see Trebilcock & Howse, *supra* note 304 at 397-401, 439-446.
[312] Edward Slavko Yambrusic, *Trade-Based Approach to the Protection of IP* (New York, London, Rome: Oceana Publications, Inc., 1992) at 9-10 [Yambrusic].
[313] Ostergard, *supra* note 299 at 77.

hand, and industrialized countries on the other.[314] Therefore, there is no guarantee that the same IP regime will be the optimum one in different economic, social, cultural, or other scenarios;[315] differences in economic and other conditions call for different IP regimes in order to be optimal at the national level.[316]

Leaving the details of this debate aside, it is generally agreed that while the comparative advantage of developed countries is innovation, the comparative advantage of developing countries is imitation of these innovations. The North is the main producer of innovations; the South is the main importer. So, for technology-importing countries weak IPRs as a form of strategic trade policy is more preferable, for it allows uncompensated imitations and copying of foreign products and technologies, which is necessary to meet their national economic development objectives, and thus provides inexpensive technology transfer.[317] The incentive effect of strong protection (the stimulation of indigenous innovation in developing countries) is negligible for developing countries since they frequently lack the prerequisite scientific and technological infrastructure necessary for development of indigenous R&D.[318]

II. Analysis of the arguments in favor of and against the sui generis rights protection for developing countries

Several arguments contained in the discussion above are of particular relevance to the case of database protection in developing countries. One such argument is the

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[314] Riis, *supra* note171 at 20.
[315] Andres Lopez, "The Impact of Protection of Non-Original Databases on the Countries of Latin America and the Caribbean" (Study prepared for the Standing Committee on Copyright and Related Rights, WIPO, 13-17 May 2002), online: WIPO <http://www.wipo.int/edocs/mdocs/copyright/en/sccr_8/sccr_8_6.pdf> at 17 [Lopez].
[316] Riis, *supra* note 171 at 19.
[317] Maskus, *IPRs, supra* note 149 at 33.
[318] Riis, *supra* note 171 at 18.

irrelevance of IP in the stimulation of indigenous R&D due to the lack the prerequisite scientific and technological infrastructure. An effective information technology infrastructure is the main requirement for the development of the digital database industry. Information technology (IT), as defined by the Information Technology Association of America,[319] is the study, design, development, implementation, and support or management of computer-based information systems, particularly software applications and computer hardware. In other words, IT deals with the use of electronic computers and computer software to convert, store, protect, process, transmit, and retrieve information (data).

Most developing countries do not have even the simplest elements of IT, such as computers or Internet connection. According to data from the Internet Usage Statistics, as of March 10, 2007 Internet penetration (the degree to which Internet is known and/or used) by world regions looks as follows: North America – 69.7%, Australia/Oceania – 53.5%, Europe – 38.9%, Latin America – 17.3%, Asia – 10.7%, Middle East – 10%, and Africa – 3.6%.[320] According to the data from the International Telecommunication Union,[321] the United Nations agency, as of 2005 personal computers in use per 100 population was 57 in the developed regions and 5 in the developing regions; Internet users per 100 population were 54 and 9 accordingly. While the recent statistics show that the digital divide that separates the developed from the developing world is shrinking,[322]

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[319] Information Technology Association of America, online: <http://www.itaa.org/>.
[320] Internet World Stat, online: <http://internetworldstats.com/stats.htm>.
[321] Vanessa Gray, "STAT's International Cooperation: Millennium Development Goals & Partnership on Measuring ICT for Development" (Paper presented at 5th World Telecommunication/ICT Indicators Meeting, Towards Harmonization of Indicators, Geneva, Switzerland, 11-13 October 2006) at 3, online: International Telecommunications Union <http://www.itu.int/md/D02-ISAP2B.1.1.1-C-0026/en>.
[322] Doreen Bogdan & Vanessa Grey, "ICT for Development for All: Current Trends, Analysis & Regulation" (Paper presented at the World Telecommunication Development Conference, Doha, Qatar

the gap is still very significant, and the IT infrastructure of developing countries in general is underdeveloped. This affects directly the database market of developing countries. In 2001, only 4.1% of the total number of databases was produced in Africa, Asia, Eastern Europe, and South Africa.[323] Two assertions can be made based on this information: (i) the IT infrastructure is underdeveloped in developing countries, and this creates a serious obstacle to the development of indigenous database makers in developing states, and (ii) developing countries are mainly importers/consumers, not the exporters/producers, of the databases.

Without an effective and wide-spread IT infrastructure the incentive effect of database protection in developing countries is comparatively lower than in the developed countries. The lack of an effective IT infrastructure in a developing country prevents the national database producers from participating in the world market for digitized database services. Underdeveloped IT infrastructure also predetermines low demand on the informational products, digital databases in particular, for there are very few consumers in the country. Since the demand is low, the supply of domestic informational products is low as well: an indigenous database market does not develop, and very few local databases are produced.

Developing countries are mainly consumers of databases; the supply mostly comes from foreign producers. According to Shengli's study of the database market in China conducted within the framework of the WIPO research of non-original database protection, the percentage of databases produced independently in China is very low: China spends 5 billion yuan every year on purchasing the software produced abroad, and

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Press Conference, 6 March 2006), online: International Telecommunications Union <http://www.itu.int/ITU-D/ict/papers/2006/WTDR06_Final.pdf>.

[323] Braunstein, *supra* note 154 at 13-14.

the expenditure for this purpose is still increasing by 25% per year.[324] In 1998, the production value of software was 14 billion yuan, 40% of which came from the production of CD databases and the related software, and most of which was produced abroad.[325] Shengli concludes that advanced countries enjoy a predominant position in the database software market of the world.[326]

Riis in his study supports this conclusion: he argues that tighter IP protection only strengthens the monopoly power of large companies that are based in industrialized countries to the detriment of developing countries. Therefore, the major beneficiaries of better IP protection, at least in the short run, would be transnational corporations.[327] Naturally, in such circumstances the major consumers of the databases, i.e. developing countries, are not interested in the tighter IP protection like *sui generis* right protection. Database users in developing countries end up paying royalties to foreign producers; few indigenous databases are produced in the local markets, and they usually find no users outside the country of origin and, thus, gain no foreign royalty payments. In the conditions of very low royalties and much stronger foreign competitors, the economic incentive to produce indigenous databases remains low. Such a situation is favorable to the developed countries, and they are interested in securing their advantages. For developing countries, according to Lopez, who conducted a study of the database market in the Latin America and Caribbean region, and concluded: "[g]iven that they are at present mainly consumers rather than producers of databases, the adoption of

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[324] Zheng Shengli, "The Economic Impact of Protection of Databases in China" (Study prepared for the Standing Committee on Copyright and Related Rights, WIPO, 13-17 May 2002), online: WIPO <http://www.wipo.int/edocs/mdocs/copyright/en/sccr_7/sccr_7_6.pdf> at 9 [Shengli].
[325] *Ibid.*
[326] *Ibid.*, at 10.
[327] Riis, *supra* note 171 at 18.

international disciplines would appear to generate an even less favorable cost-benefit balance than in the advanced nation."[328]

Another implication of the *sui generis* protection of databases for developing countries is related to the indigenous R&D. As discussed earlier, current interpretations of *sui generis* right legislation result in the *de facto* monopolization of information and thus shrink the public domain, impede further research, and the creation of value-added products and analogous products; in the rather expressive words of James Love, the *sui generis* right is "a nightmare for researchers and value added publishers".[329] This consideration is especially important for developing countries. Databases are powerful tools for research, education, and commerce. They have become "the building blocks of the information society."[330] In the context of technological development, research databases play a crucial role. However, under the *Directive* and the *WIPO Database Treaty Draft*, third parties will not be able to avoid the expenses of regenerating preexisting data. Furthermore, regardless of whether it is possible to regenerate the data from publicly available sources, owners of the existing databases can always deny third parties the right to use pre-existing data (due to the absence of the compulsory licensing provisions either in the *Directive* or the *WIPO Database Treaty Draft*). Refusals to license and use pre-existing data and shrinking of the public domain increase the cost of research and create further barriers to entry. Strong *sui generis* right protection of non-original databases creates a danger that scientific and educational communities will be priced out of the market or will have to cut back on their scientific and educational activities, thus, impeding technological and economic development. Scientific and

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[328] Lopez, *supra* note 313 at 3.
[329] Love, *supra* note 31.
[330] Riis, *supra* note 171 at 29.

educational communities in developing countries and countries in transition are especially vulnerable to high prices on research databases.[331] As Willinsky notes:

> [I]f the leading research libraries in North America have been unable to keep pace with the growth (and increased pricing) of scholarly publishing, it should give us pause to ponder what is happening to less fortunate universities, especially in developing countries... University populations are growing, and the number of qualified and interested researchers is increasing, but the global contribution of this potential research capacity is threatened at its root by empty library shelves and out-of-date literature. It adds up to a picture of declining access to knowledge across a global academic community.[332]

Currently, the forms of non-original database protection suggested in the *WIPO Database Treaty Draft* are drafted in the form of an exclusive right and have few statutory exemptions. They reflect the position of the developed countries that strong protection of the IPRs in databases, without too many limitations or exemptions, will encourage the growth of local production of databases in developing countries.[333] This is a questionable statement; high prices for access to the information essential for the indigenous R&D that used to be in the public domain will definitely affect developing countries. Most likely, developing countries, considering their economic conditions, will not be able to allocate additional financial resources to pay for the newly imposed expenses such as access to or usage of databases or even licensing fees for data collection. The extensively raised research costs can seriously impede research in developing countries. "The only ray of light and hope"[334] may be an open access movement[335] based on a principle that a commitment to the value and quality of research

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[331] *Ibid.*, at 29-30.
[332] Willinsky, *supra* note 198 at 25.
[333] Braunstein, *supra* note 154 at 27.
[334] Willinsky, *supra* note 198 at 25.
[335] The open access movement is a growing practice of making research articles available online, free of charge, immediately, permanently, and full-text in order to share knowledge more effectively worldwide. There are several international statements on the open access movement, and there is a growing list of

carries with it a responsibility to extend the circulation of this work as far as possible.[336] Indeed, free access to information gathered by the academic communities all over the world could benefit developing countries a lot. At the same time, while users benefit from the free access movement, they lose from the information being included in databases protected under the *sui generis* right. At the end, the balance does not shift towards free dissemination of information, at least not until the number of signatories to the free access movement statements increases significantly.

Finally, another potential consequence of the *sui generis* rights legislation that may impede the advancement of scientific research particularly affecting developing countries is that the absence of incentives to cooperate and the mistrust between researchers caused by their fear over the commercial use of shared knowledge are aspects that hinder the relationships that could be established between researchers in developing and developed countries.[337] Thus, adequate safeguard provisions that recognize the needs of the scientific and educational communities for unrestricted access to data at affordable prices are particularly essential for developing countries.

Information is the key element of the generation and improvement of knowledge, and knowledge is the key element of technological progress and development. As it is stated at the Human Development Report of 2001 on interconnection of technologies and human development, "[t]echnological progress is not a simple hand-me-down in an appropriate form and cost to developing country users. Rather, it must also be a process

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signatories. For more the open access movement and its history on that see Willinsky, *supra* note 198, chapter 1.

[336] Willinsky, *supra* note 198 at 5.

[337] Lopez, *supra* note 313 at 17.

of knowledge creation and capacity building in developing countries."[338] A database is one of the forms that information and knowledge take. The *sui generis* right impedes access to databases, hence, to information and knowledge. Without access to information the process of knowledge creation in developing countries slows down, and developing countries cannot advance in their technological progress and development.

There are many arguments in favor of *sui generis* right protection of databases for developing countries, but few of them sustain critical examination. For the developed countries one of the main arguments that triggered the debate over the necessity of the *sui generis* protection in their own legal systems is the *Directive*'s reciprocity provisions: the *Directive* denies protection to databases created outside the E.U. unless the country of origin offers comparable protection to databases created by E.U. nationals or residents.[339] The non-E.U. database industry of the developed world fears that the failure to reciprocate the protection afforded by the E.U. would render their databases open for wholesale piracy in Europe.[340] But for developing countries the potential losses from the failure to reciprocate to the E.U. database provisions will be very insignificant or even non-existent, because the database industry is not developed and there are very few databases produced. Thus, the major argument that is driving developed countries toward implementation of *sui generis* right protection is not of particular concern to developing countries.

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[338] *Making New Technologies Work for Human Development*, Human Development Report 2001, online: Human development Reports <http://hdr.undp.org/reports/global/2001/en/> at Foreword, iv.
[339] The *Directive*, *supra* note 12, Recital 56.
[340] David Mirchin, "The European Database Directive Sets the Worldwide Agenda" 39:1 *NFAIS Newsletter* (January 1997) 7, online: National Federation of Science Abstracting and Indexing Services <http://www.nfais.org/publications/white_papers_2.htm>.

Another argument in favor of the implementation of *sui generis* right protection in developing countries originates from, probably, the most fundamental issue of the North-South problem: whether stronger IP protection in developing countries actually stimulates indigenous innovation (in this case whether a *sui generis* right is capable of stimulating the development of the indigenous database markets). There is no empirical data available on this matter. But there is data that can, although indirectly, be considered as evidence.

Riis in his study provides an overview of the IP legislation changes in the African countries, in particular, the strengthening of patent laws to meet the international standards.[341] He concludes that in African countries patent law has not created significant effects regarding dissemination of technological knowledge or facilitated noticeable growth of domestic innovation.[342] The relatively strong patent protection has not resulted in a high rate of patent registrations; nor does it seem to have facilitated technology transfer into these countries.[343] The lack of relevant resources and IT infrastructure are the main obstacles in the way of the development of domestic innovations and database markets in developing, and especially in least developed, countries. Stronger IPRs are thought to trigger indigenous database production. But it is not the absence of IP that impedes the development of local database markets – it is a matter of available IT infrastructure. And, as Riis justly notes, the ways in which a developing country can develop IT infrastructure, in principle, is not a matter of IP law;[344] rather it is a major

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[341] Riis, *supra* note 171 at 19-20.
[342] For more on this topic see Abdulqawi A. Yusuf, "IP Protection in the Countries of Africa", (1995) 10 *International Journal of Technology Management* 269.
[343] Riis, *supra* note 171 at 25.
[344] *Ibid.*, at 28-29.

issue that requires complex economic, political, and social approaches, and IPR is only one component among the broad set of factors.[345]

Perhaps developed countries could facilitate the development of IT infrastructure in the developing nations through technology transfer, and strong IP protection is viewed as means of such transfer. A notion that stronger IP regimes would facilitate the transfer of technology to developing countries is another traditional argument of the developed countries.[346] Developing countries may be interested in increasing their IP standards in order to stimulate technology transfer, for the losses on the imposition of the strong IPRs, such as higher prices, reduced imitation, and potential abuses, hypothetically can be compensated for by the benefits of the technology transfer, such as gains in innovations and development of indigenous production.[347]

This argument is the subject of heated debates, especially regarding patent protection,[348] but it is not really relevant to the case of databases. In terms of technology transfer, the gains from the imposition of the *sui generis* right are not as clear. It is often cheaper for a developing nation to appropriate innovation than to legally acquire or develop its own.[349] The latter takes place if the country is interested in developing its own technology and its own production, and foreign aid may be required in order to do that.

The case of digital databases is different: it is not the technology that is transferred,[350] it is the data. Certainly, technology transfer may stimulate the creation of the IT infrastructure in a developing country, and that can stimulate the development of

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[345] Maskus, *The role of IPRs, supra* note 295 at 152.
[346] Lee G. Branstetter, Raymond Fisman & C. Fritz Foley, "Do Stronger IRPs Increase International Technology Transfer: Empirical Evidence from U.S. Firm-Level Panel Data" (NBER Working Paper No. W11516, August 2005), online: SSRN <http://ssrn.com/abstract=776004>.
[347] Maskus, *IPRs, supra* note 149 at 170.
[348] Maskus, *The Role of IPRs, supra* note 295 at 144-146.
[349] Ostergard, *supra* note 299 at 76.
[350] Riis, *supra* note 171 at 28.

the domestic database production. But the creation of such infrastructure requires time and, most importantly, money. Foreign investments, a source of financing, may possibly be attracted by the imposition of high IP standards, but the gains from imposition of IP standards may not outweigh the losses in the case of databases; the contents of the database can be simply appropriated, without going through the trouble of increasing IP protection, attracting foreign investments, and creating IT infrastructure. While the availability of the domestic IT infrastructure can certainly be helpful for the development of indigenous IP products, databases in particular, the short-term gains of simple appropriation often look more attractive to developing countries.[351] Thus, they resist the imposition of a *sui generis* right, as it will hamper appropriation if the database content.

An argument, closely related to the facilitation of technology transfer is that strong IP protection may benefit developing countries in terms of attracting foreign investments in the field.[352] The very basic notion of the apparent importance that IPRs play in the attraction of foreign direct investment has been questioned many times; there is empirical evidence both in support of and against this argument. [353] There are cases when it is valid, but those cases are subject to certain conditions. For example, Vandrevela in his study on the prospects of *sui generis* rights protection of databases in India[354] states that implementation of database protection may be beneficial for a country that has a vast economic potential in a particular industry in a sense that it will attract more foreign investments. But this argument applies only to the countries that hold a

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[351] Yambrusic, *supra* note 310 at 9.
[352] Maskus, *IPRs, supra* note 149 at 7.
[353] Maskus, *The Role of IPRs, supra* note 295 at 143.
[354] Phiroz Vandrevala, "A Study on the Impact of Unoriginal Databases on Developing Countries: Indian Experience" (Study prepared for the Standing Committee on Copyright and Related Rights, WIPO, 13-17 May 2002), online: WIPO <http://www.wipo.int/edocs/mdocs/copyright/en/sccr_7/sccr_7_5.pdf> [Vandrevala].

potential in the IT area. The least-developed countries have no proper IT infrastructure, thus, these countries possess nothing that can attract foreign investment in the first place and, therefore, this argument is not applicable to them.

III. Reasons for the resistance to the sui generis right of developing countries

Usually, strong IP protection (or in some cases even the concept of IP protection itself) is not accepted eagerly by the developing nations. Vandrevela points out the very important consideration that is frequently overlooked among other reasons for the general resistance to the *sui generis* right by developing countries:

> [The] problem of potential non-access is heightened in the case of developing countries (such as India), where the psyche of the social and economic thinkers has always been against the grant of intellectual property rights. The "incentive argument" in these countries does not augur well either with the scientific and academic communities or with the general populace. One of the reasons for this dislike of the IPR system is that these are considered as alien concepts imposed by the capitalist economies.[355]

And even if the IP concept is not perceived as alien, developing countries do not support it because they feel that, as it is stated in the U.K. Commission of the IPR 2002 report *Integrating IPRs and development*, "[they] may not be sharing appropriately in the benefits from commercialization of their knowledge or genetic resources when they are patented in developed countries."[356]

Developing countries are accepting new forms of IP protection more willingly when it is felt that the interests of the domestic industry need to be protected. An excellent example of a developing country that is proactively working towards increased

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[355] *Ibid.*, at 29.

[356] Commission on IPRs, "Integrating IPRs and Development" (The Final Report of the Commission on IPRs, 2002), online: Commission on IPRs <http://www.iprcommission.org/graphic/documents/final_report.htm>.

IP protection is the case of India, which has implemented strict IP laws for the protection of traditional knowledge and geographical indications.[357] However, the real need for the *sui generis* rights protection of non-original databases is not obvious even for the developed countries, and much less obvious for developing countries. A national database producer in a developing country with underdeveloped IT infrastructure will not be able to create complex digitized databases for the home market, because, once again, due to the low degree of computer and network penetration, there is no demand for such product in the home market. The producer may create a complex digitized database for export. However, in that case domestic IP protection is irrelevant; what matters is IP protection in the export markets.[358] In light of these circumstances, developing countries have little or no interest in the voluntary imposition of the new legalized monopoly.

There are other, more important reasons why developing countries are resistant to strong IP protection in addition to those mentioned above. Shengli in his study concludes that due to their quality, databases produced in China are not competitive on the international market.[359] The fact that most of them only use the Chinese language also constitutes another constraint in satisfying the needs of their users abroad, thus decreasing their opportunity of providing services to other countries.[360] So, domestic database producers have a limited market to sell their products in. In addition, they have little to offer even to domestic consumers compared to the products of foreign producers

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[357] For more on this topic see Desh Deepak Verma, "Protection of Traditional Knowledge - The Indian Perspective" (Presentation at the International Seminar on Systems of Protection of Traditional Knowledge on April 3-5, 2002, New Delhi), online: UNCTAD <http://www.unctad.org/trade_env/test1/meetings/delhi/India/MOEF-I.ppt>.

[358] Riis, *supra* note 171 at 22.

[359] Shengli, *supra* note 322 at 10.

[360] *Ibid.*, at 11. In fact, language is a very serious constraint in the global advancement of the local databases from the developing countries. According to the Gale Directory of Databases, in 2001 an overwhelming majority (68%) of the databases were produced in English, European languages accounted for the rest. (Braunstein, *supra* note 154 at 14).

from the developed countries. Foreign database producers have serious advantages over domestic database producers – their databases are of a better quality, because they have more resources available, they can afford to invest more in production, and they simply have more experience in business. As a result, local consumers may prefer foreign databases due to their better quality. In the absence of serious competition foreign producers may *de facto* monopolize domestic markets, and the *sui generis* right can only aggravate this situation.

Maskus proposes a solution to decrease the negative effect of monopolization of the markets of developing countries. He asserts that the availability of substitute products can blunt monopoly pricing impacts and thus facilitate the development of the competitive processes in the domestic markets of developing countries.[361] While this seems to be a valid strategy in general, in reality it is not always applicable to the database market. For example, as discussed in the third chapter, the very nature of certain databases makes analogous databases unnecessary: in certain areas whoever creates the first database gets to generate all the benefits.[362] Therefore, in certain cases there is no room for the creation of substitute products in the domestic markets. The only thing that domestic producers could offer in such cases is a translated version of the existing database so that it better suits the demands of the local users. Still, this can hardly count as a local substitute database; the permission of the owner of the initial database will definitely be required in order to produce a translated version, and license fees will also have to be paid. Naturally, this is not competitive.

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[361] Maskus, *IPRs*, *supra* note 149 at 141.
[362] See chapter 3, above, at 48-49, for more on this topic.

Also, many developing countries fear that with the implementation of a *sui generis* right their markets will become more monopolized by foreign exporting firms. This concern is especially pronounced if a country possesses unique informational resources (for example, traditional knowledge) that are of a great value to them as well as being subjects of great interest to the global community. As El-Kassas notes, companies that take initiatives to compile databases about local resources and heritage can effectively obtain a destructive monopoly, which is likely to have an adverse effect on development and information access.[363]

As an illustration, the example of the case of Saki Mafundikwa, the director of the Zimbabwe Institute of Vigital Arts,[364] can be used. He has developed databases of symbols, scripts, and signs used in a number of African languages.[365] Therefore, this information is controlled by the African prominent researcher. Maria Canellopoulou-Bottis offers to model a hypothetical situation where an American researcher, funded by a US grant, "locks" the African alphabet in a protected database and then controls access to it by those who are entitled to it in Africa.[366] Luckily, the African researcher has created this database first. Another developing country may not have the resources to conduct necessary research to compile existing traditional knowledge (or any other valuable information at its disposal) in a protected database; a developed country, having the resources, may do it first. If that developing country implements *sui generis* right protection, the content of the database – created by a producer from a developed country

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[363] El-Kassas, *supra* note 282 at 9.
[364] Zimbabwe Institute of Vigital Arts official website, online: <http://www.ziva.org.zw/>.
[365] Saki Mafundikwa, "African Alphabets" (Harare, Zimbabwe, November 2000), online: Zimbabwe Institute of Vigital Arts <http://www.ziva.org.zw/afrikan.htm>.
[366] Maria Canellopoulou-Bottis, "A Different Kind of War: Internet Databases and Legal Protection or How the Strict IP Laws of the West Threaten the Developing Countries' Informational ommons" (2004) 2 *International Review of Information Ethics*, online: SSRN <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=952882> at 19 [Canellopoulou-Bottis].

based on the informational resources of a developing country – will belong to its rightholder practically forever.[367]

IV. Conclusion

It is very difficult to assess the overall desirability of harmonized standards of IP protection at a worldwide level. However, it is generally agreed that prospective economic benefits of uniform and high IP standards are comparatively lower in developing countries than in industrialized countries. In the short run, developing countries, which typically are technology importers, will lose social welfare by enhanced IP standards, because higher IP standards lead to an increase in royalty payments to foreign right owners. Correspondingly, a stricter regime of IP protection implies social welfare gains in technology-exporting countries. The costs and benefits of enhanced IP standards in the long run are more obscure. Long run benefits emanating from strong IP protection in developing countries require that the IP protection in fact stimulates indigenous innovation, which is most likely to occur in countries in transition and middle-income developing countries and least likely in the least developed countries.[368] While existing economic analysis does not provide clear-cut conclusions on how to design an optimal IP for all developing countries, it probably makes sense to avoid imposing of IP rights on them.

The doubts as to the beneficial economic effect on developing countries of enhanced IP protection are further aggravated in connection with protection of non-

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[367] Due to the *WIPO Database Treaty Draft*'s provision of a minimal requirement of the regular updates to qualify the database resulting from such updates for a new, separate term of protection. See *WIPO Database Treaty Draft*, *supra* note 13, Article 8.
[368] Riis, *supra* note 171 at 28.

original databases. Developing countries lack an effective IT infrastructure required for the development of the indigenous database market; they are mainly importers of the databases from the developed countries. Multiple implications that are likely to occur if developing countries implement *sui generis* rights protection have been discussed above. In light of those arguments it becomes evident why developing nations are reluctant to support the *WIPO Database Treaty Draft*. Besides, developing countries do not seem to be damaged by the absence of *sui generis* right protection; the commercial damage that is done seems to derive more from the lack of adequate enforcement of the legislation currently in existence. Therefore, in developing countries' view, at present there is no definite economic or social interest for them in implementing international legislation on *sui generis* right protection of non-original databases.

Chapter 6

Conclusion

For the last decades IP laws have been strengthened significantly both at domestic and international levels. As Lemley notes, the latest tendencies of IP law reflect that IP is treated not as a limited exception to the principle of market competition that permits producers to make enough money to cover their costs, but as a good in and of itself; stronger IP protection is provided since it is believed such practices encourage innovations, and while absolute protection is not yet achievable, it seems to become the goal of the system.[369] The outcome of such expansion of IP protection is that "from a system that had evolved to protect the creative works of authors, inventors and artists, the IP system has now come to embody a system that is geared towards protecting investments, irrespective of their literary or inventive merit."[370]

The new *sui generis* protection for non original databases is, probably, the best illustration of this statement. The *sui generis* rights protection is based solely on the time and investment of the database maker, it creates an exclusive property rights regime of virtually unlimited duration, and it provides exemptions even more limited then those in copyright. It is particularly important (and, to a certain degree, unreasonable) that the level of protection offered by copyright for creative products is thin compared with the new additional *sui generis* rights protection offered by the *Directive* to non-original creations.[371]

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[369] Mark A. Lemley, "Property, IP, and Free Riding" (2005) 83 Tex. L. Rev. 1031 at 1031.
[370] Vandrevala, *supra* note 352 at 29.
[371] Anne Linn, "History of Database Protection: Legal Issues of Concern to the Scientific Community, Scientific Access to Data and Information" (March 3, 2000), online: Committee on Data for Science and Technology <http://www.codata.org/data_access/linn.html#Box%201>.

The claims of the makers of non-original databases that they suffer significant losses due to the lack of the *sui generis* rights protection are not supported by any convincing evidence. The example of Europe that implemented the *sui generis* rights regime over a decade ago also shows no significant changes in the pattern of the database market; the evaluations of the *Directive* supplied no strong empirical evidence on the positive effects of the *sui generis* rights protection on the development of database production in Europe. Finally, major IP theories (Locke's, social production, and utilitarian), when applied to *sui generis* rights protection, do not provide a solid theoretical basis for the justification of the new database protection form.

The potential implications of the *sui generis* rights regime, however, can be rather significant. The *sui generis* rights regime can jeopardize basic scientific research, eliminate competition in the markets for value-added products and services, convert existing barriers to entry into overwhelming legal barriers to entry, and lead to *de facto* monopolization of data. These implications of *sui generis* rights protection will only increase in developing countries. Artificial scarcity of knowledge created by the *de facto* monopolization of information can impair development of developing countries. Given that they are at present mainly consumers rather than producers of databases, the adoption of international disciplines would appear to generate an even less favorable cost-benefit balance than in the advanced nations. Besides, there is an additional potential danger of *de facto* monopolization of the unique informational resources of developing countries by foreign firms through the mechanism of *sui generis* rights.

As for the legitimate concerns of database producers regarding losses from the lack of proper protection of their products, they can be met within the framework of the

existing IP laws and systems. Database producers can protect the contents of their databases by using technical means, such as registration tools, submitted queries, encryptions, and others. There are also legal options at their disposal: unfair competition laws, trade secret laws, copyright, contracts, *etc*. The combination of technical and legal measures is capable of providing rather effective protection to the contents of non-original databases. These measures are certainly preferable to the creation of a new legalized monopoly such as the *sui generis* rights regime.

The need for *sui generis* rights protection is not supported by any convincing theoretical or empirical evidence, and potential implications of the *sui generis* rights protection are rather grave. Thus, the *sui generis* right should not be implemented at the international level beyond the E.U. region, and the needs of the producers of non-original databases to protect their products can be met by the combination of technical means and legal tools within the existing legal framework.

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APPENDIX 1

DIRECTIVE 96/9/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 March 1996 on the legal protection of databases

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 57 (2), 66 and 100a thereof,

Having regard to the proposal from the Commission (1),

Having regard to the opinion of the Economic and Social Committee (2),

Acting in accordance with the procedure laid down in Article 189b of the Treaty (3),

(1) Whereas databases are at present not sufficiently protected in all Member States by existing legislation; whereas such protection, where it exists, has different attributes;

(2) Whereas such differences in the legal protection of databases offered by the legislation of the Member States have direct negative effects on the functioning of the internal market as regards databases and in particular on the freedom of natural and legal persons to provide on-line database goods and services on the basis of harmonized legal arrangements throughout the Community; whereas such differences could well become more pronounced as Member States introduce new legislation in this field, which is now taking on an increasingly international dimension;

(3) Whereas existing differences distorting the functioning of the internal market need to be removed and new ones prevented from arising, while differences not adversely affecting the functioning of the internal market or the development of an information market within the Community need not be removed or prevented from arising;

(4) Whereas copyright protection for databases exists in varying forms in the Member States according to legislation or case-law, and whereas, if differences in legislation in the scope and conditions of protection remain between the Member States, such unharmonized intellectual property rights can have the effect of preventing the free movement of goods or services within the Community;

(5) Whereas copyright remains an appropriate form of exclusive right for authors who have created databases;

(6) Whereas, nevertheless, in the absence of a harmonized system of unfair-competition legislation or of case-law, other measures are required in addition to prevent the unauthorized extraction and/or re-utilization of the contents of a database;

(7) Whereas the making of databases requires the investment of considerable human, technical and financial resources while such databases can be copied or accessed at a fraction of the cost needed to design them independently;

(8) Whereas the unauthorized extraction and/or re-utilization of the contents of a database constitute acts which can have serious economic and technical consequences;

(9) Whereas databases are a vital tool in the development of an information market within the Community; whereas this tool will also be of use in many other fields;

(10) Whereas the exponential growth, in the Community and worldwide, in the amount of information generated and processed annually in all sectors of commerce and industry calls for investment in all the Member States in advanced information processing systems;

(11) Whereas there is at present a very great imbalance in the level of investment in the database sector both as between the Member States and between the Community and the world's largest database-producing third countries;

(12) Whereas such an investment in modern information storage and processing systems will not take place within the Community unless a stable and uniform legal protection regime is introduced for the protection of the rights of makers of databases;

(13) Whereas this Directive protects collections, sometimes called 'compilations', of works, data or other materials which are arranged, stored and accessed by means which include electronic, electromagnetic or electro-optical processes or analogous processes;

(14) Whereas protection under this Directive should be extended to cover non-electronic databases;

(15) Whereas the criteria used to determine whether a database should be protected by copyright should be defined to the fact that the selection or the arrangement of the contents of the database is the author's own intellectual creation; whereas such protection should cover the structure of the database;

(16) Whereas no criterion other than originality in the sense of the author's intellectual creation should be applied to determine the eligibility of the database for copyright protection, and in particular no aesthetic or qualitative criteria should be applied;

(17) Whereas the term 'database' should be understood to include literary, artistic, musical or other collections of works or collections of other material such as texts, sound, images, numbers, facts, and data; whereas it should cover collections of independent works, data or other materials which are systematically or methodically arranged and can be individually accessed; whereas this means that a recording or an audiovisual, cinematographic, literary or musical work as such does not fall within the scope of this Directive;

(18) Whereas this Directive is without prejudice to the freedom of authors to decide whether, or in what manner, they will allow their works to be included in a database, in particular whether or not the authorization given is exclusive; whereas the protection of databases by the sui generis right is without prejudice to existing rights over their contents, and whereas in particular where an author or the holder of a related right permits some of his works or subject matter to be included in a database pursuant to a non-exclusive agreement, a third party may make use of those works or subject matter subject to the required consent of the author or of the holder of the related right without the sui generis right of the maker of the database being invoked to prevent him doing so, on condition that those works or subject matter are neither extracted from the database nor re-utilized on the basis thereof;

(19) Whereas, as a rule, the compilation of several recordings of musical performances on a CD does not come within the scope of this Directive, both because, as a compilation, it does not meet the conditions for copyright protection and because it does not represent a substantial enough investment to be eligible under the sui generis right;

(20) Whereas protection under this Directive may also apply to the materials necessary for the operation or consultation of certain databases such as thesaurus and indexation systems;

(21) Whereas the protection provided for in this Directive relates to databases in which works, data or other materials have been arranged systematically or methodically; whereas it is not necessary for those materials to have been physically stored in an organized manner;

(22) Whereas electronic databases within the meaning of this Directive may also include devices such as CD-ROM and CD-i;

(23) Whereas the term 'database' should not be taken to extend to computer programs used in the making or operation of a database, which are protected by Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs (4);

(24) Whereas the rental and lending of databases in the field of copyright and related rights are governed exclusively by Council Directive 92/100/EEC of 19 November 1992 on rental right and lending right and on certain rights related to copyright in the field of intellectual property (5);

(25) Whereas the term of copyright is already governed by Council Directive 93/98/EEC of 29 October 1993 harmonizing the term of protection of copyright and certain related rights (6);

(26) Whereas works protected by copyright and subject matter protected by related rights, which are incorporated into a database, remain nevertheless protected by the respective exclusive rights and may not be incorporated into, or extracted from, the database without the permission of the rightholder or his successors in title;

(27) Whereas copyright in such works and related rights in subject matter thus incorporated into a database are in no way affected by the existence of a separate right in the selection or arrangement of these works and subject matter in a database;

(28) Whereas the moral rights of the natural person who created the database belong to the author and should be exercised according to the legislation of the Member States and the provisions of the Berne Convention for the Protection of Literary and Artistic Works; whereas such moral rights remain outside the scope of this Directive;

(29) Whereas the arrangements applicable to databases created by employees are left to the discretion of the Member States; whereas, therefore nothing in this Directive prevents Member States from stipulating in their legislation that where a database is created by an employee in the execution of his duties or following the instructions given by his employer, the employer exclusively shall be entitled to exercise all economic rights in the database so created, unless otherwise provided by contract;

(30) Whereas the author's exclusive rights should include the right to determine the way in which his work is exploited and by whom, and in particular to control the distribution of his work to unauthorized persons;

(31) Whereas the copyright protection of databases includes making databases available by means other than the distribution of copies;

(32) Whereas Member States are required to ensure that their national provisions are at least materially equivalent in the case of such acts subject to restrictions as are provided for by this Directive;

(33) Whereas the question of exhaustion of the right of distribution does not arise in the case of on-line databases, which come within the field of provision of services; whereas this also applies with regard to a material copy of such a database made by the user of such a service with the consent of the rightholder; whereas, unlike CD-ROM or CD-i, where the intellectual property is incorporated in a material medium, namely an item of goods, every on-line service is in fact an act which will have to be subject to authorization where the copyright so provides;

(34) Whereas, nevertheless, once the rightholder has chosen to make available a copy of the database to a user, whether by an on-line service or by other means of distribution, that lawful user must be able to access and use the database for the purposes and in the way set out in the agreement with the rightholder, even if such access and use necessitate performance of otherwise restricted acts;

(35) Whereas a list should be drawn up of exceptions to restricted acts, taking into account the fact that copyright as covered by this Directive applies only to the selection or arrangements of the contents of a database; whereas Member States should be given the option of providing for such exceptions in certain cases; whereas, however, this option should be exercised in accordance with the Berne Convention and to the extent that the exceptions relate to the structure of the database; whereas a distinction should be drawn between exceptions for private use and exceptions for reproduction for private purposes, which concerns provisions under national legislation of some Member States on levies on blank media or recording equipment;

(36) Whereas the term 'scientific research` within the meaning of this Directive covers both the natural sciences and the human sciences;

(37) Whereas Article 10 (1) of the Berne Convention is not affected by this Directive;

(38) Whereas the increasing use of digital recording technology exposes the database maker to the risk that the contents of his database may be copied and rearranged electronically, without his authorization, to produce a database of identical content which, however, does not infringe any copyright in the arrangement of his database;

(39) Whereas, in addition to aiming to protect the copyright in the original selection or arrangement of the contents of a database, this Directive seeks to safeguard the position of makers of databases against misappropriation of the results of the financial and professional investment made in obtaining and collection the contents by protecting the whole or substantial parts of a database against certain acts by a user or competitor;

(40) Whereas the object of this sui generis right is to ensure protection of any investment in obtaining, verifying or presenting the contents of a database for the limited duration of the right; whereas such investment may consist in the deployment of financial resources and/or the expending of time, effort and energy;

(41) Whereas the objective of the sui generis right is to give the maker of a database the option of preventing the unauthorized extraction and/or re-utilization of all or a substantial part of the contents of that database; whereas the maker of a database is the

person who takes the initiative and the risk of investing; whereas this excludes subcontractors in particular from the definition of maker;

(42) Whereas the special right to prevent unauthorized extraction and/or re-utilization relates to acts by the user which go beyond his legitimate rights and thereby harm the investment; whereas the right to prohibit extraction and/or re-utilization of all or a substantial part of the contents relates not only to the manufacture of a parasitical competing product but also to any user who, through his acts, causes significant detriment, evaluated qualitatively or quantitatively, to the investment;

(43) Whereas, in the case of on-line transmission, the right to prohibit re-utilization is not exhausted either as regards the database or as regards a material copy of the database or of part thereof made by the addressee of the transmission with the consent of the rightholder;

(44) Whereas, when on-screen display of the contents of a database necessitates the permanent or temporary transfer of all or a substantial part of such contents to another medium, that act should be subject to authorization by the rightholder;

(45) Whereas the right to prevent unauthorized extraction and/or re-utilization does not in any way constitute an extension of copyright protection to mere facts or data;

(46) Whereas the existence of a right to prevent the unauthorized extraction and/or re-utilization of the whole or a substantial part of works, data or materials from a database should not give rise to the creation of a new right in the works, data or materials themselves;

(47) Whereas, in the interests of competition between suppliers of information products and services, protection by the sui generis right must not be afforded in such a way as to facilitate abuses of a dominant position, in particular as regards the creation and distribution of new products and services which have an intellectual, documentary, technical, economic or commercial added value; whereas, therefore, the provisions of this Directive are without prejudice to the application of Community or national competition rules;

(48) Whereas the objective of this Directive, which is to afford an appropriate and uniform level of protection of databases as a means to secure the remuneration of the maker of the database, is different from the aim of Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (7), which is to guarantee free circulation of personal data on the basis of harmonized rules designed to protect fundamental rights, notably the right to privacy which is recognized in Article 8 of the European Convention for the Protection of Human Rights and Fundamental Freedoms; whereas the provisions of this Directive are without prejudice to data protection legislation;

(49) Whereas, notwithstanding the right to prevent extraction and/or re-utilization of all or a substantial part of a database, it should be laid down that the maker of a database or rightholder may not prevent a lawful user of the database from extracting and re-utilizing insubstantial parts; whereas, however, that user may not unreasonably prejudice either the legitimate interests of the holder of the sui generis right or the holder of copyright or a related right in respect of the works or subject matter contained in the database;

(50) Whereas the Member States should be given the option of providing for exceptions to the right to prevent the unauthorized extraction and/or re-utilization of a substantial part of the contents of a database in the case of extraction for private purposes, for the purposes of illustration for teaching or scientific research, or where extraction and/or re-utilization are/is carried out in the interests of public security or for the purposes of an administrative or judicial procedure; whereas such operations must not prejudice the exclusive rights of the maker to exploit the database and their purpose must not be commercial;

(51) Whereas the Member States, where they avail themselves of the option to permit a lawful user of a database to extract a substantial part of the contents for the purposes of illustration for teaching or scientific research, may limit that permission to certain categories of teaching or scientific research institution;

(52) Whereas those Member States which have specific rules providing for a right comparable to the sui generis right provided for in this Directive should be permitted to retain, as far as the new right is concerned, the exceptions traditionally specified by such rules;

(53) Whereas the burden of proof regarding the date of completion of the making of a database lies with the maker of the database;

(54) Whereas the burden of proof that the criteria exist for concluding that a substantial modification of the contents of a database is to be regarded as a substantial new investment lies with the maker of the database resulting from such investment;

(55) Whereas a substantial new investment involving a new term of protection may include a substantial verification of the contents of the database;

(56) Whereas the right to prevent unauthorized extraction and/or re-utilization in respect of a database should apply to databases whose makers are nationals or habitual residents of third countries or to those produced by legal persons not established in a Member States, within the meaning of the Treaty, only if such third countries offer comparable protection to databases produced by nationals of a Member States or persons who have their habitual residence in the territory of the Community;

(57) Whereas, in addition to remedies provided under the legislation of the Member States for infringements of copyright or other rights, Member States should provide for appropriate remedies against unauthorized extraction and/or re-utilization of the contents of a database;

(58) Whereas, in addition to the protection given under this Directive to the structure of the database by copyright, and to its contents against unauthorized extraction and/or re-utilization under the sui generis right, other legal provisions in the Member States relevant to the supply of database goods and services continue to apply;

(59) Whereas this Directive is without prejudice to the application to databases composed of audiovisual works of any rules recognized by a Member States's legislation concerning the broadcasting of audiovisual programmes;

(60) Whereas some Member States currently protect under copyright arrangements databases which do not meet the criteria for eligibility for copyright protection laid down in this Directive; whereas, even if the databases concerned are eligible for protection under the right laid down in this Directive to prevent unauthorized extraction and/or re-

utilization of their contents, the term of protection under that right is considerably shorter than that which they enjoy under the national arrangements currently in force; whereas harmonization of the criteria for determining whether a database is to be protected by copyright may not have the effect of reducing the term of protection currently enjoyed by the rightholders concerned; whereas a derogation should be laid down to that effect; whereas the effects of such derogation must be confined to the territories of the Member States concerned,

HAVE ADOPTED THIS DIRECTIVE:

CHAPTER I

SCOPE

Article 1

Scope

1. This Directive concerns the legal protection of databases in any form.

2. For the purposes of this Directive, 'database` shall mean a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means.

3. Protection under this Directive shall not apply to computer programs used in the making or operation of databases accessible by electronic means.

Article 2

Limitations on the scope

This Directive shall apply without prejudice to Community provisions relating to:

(a) the legal protection of computer programs;

(b) rental right, lending right and certain rights related to copyright in the field of intellectual property;

(c) the term of protection of copyright and certain related rights.

CHAPTER II

COPYRIGHT

Article 3

Object of protection

1. In accordance with this Directive, databases which, by reason of the selection or arrangement of their contents, constitute the author's own intellectual creation shall be protected as such by copyright. No other criteria shall be applied to determine their eligibility for that protection.

2. The copyright protection of databases provided for by this Directive shall not extend to their contents and shall be without prejudice to any rights subsisting in those contents themselves.

Article 4

Database authorship

1. The author of a database shall be the natural person or group of natural persons who created the base or, where the legislation of the Member States so permits, the legal person designated as the rightholder by that legislation.

2. Where collective works are recognized by the legislation of a Member States, the economic rights shall be owned by the person holding the copyright.

3. In respect of a database created by a group of natural persons jointly, the exclusive rights shall be owned jointly.

Article 5

Restricted acts

In respect of the expression of the database which is protectable by copyright, the author of a database shall have the exclusive right to carry out or to authorize:

(a) temporary or permanent reproduction by any means and in any form, in whole or in part;

(b) translation, adaptation, arrangement and any other alteration;

(c) any form of distribution to the public of the database or of copies thereof. The first sale in the Community of a copy of the database by the rightholder or with his consent shall exhaust the right to control resale of that copy within the Community;

(d) any communication, display or performance to the public;

(e) any reproduction, distribution, communication, display or performance to the public of the results of the acts referred to in (b).

Article 6

Exceptions to restricted acts

1. The performance by the lawful user of a database or of a copy thereof of any of the acts listed in Article 5 which is necessary for the purposes of access to the contents of the databases and normal use of the contents by the lawful user shall not require the authorization of the author of the database. Where the lawful user is authorized to use only part of the database, this provision shall apply only to that part.

2. Member States shall have the option of providing for limitations on the rights set out in Article 5 in the following cases:

(a) in the case of reproduction for private purposes of a non-electronic database;

(b) where there is use for the sole purpose of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved;

(c) where there is use for the purposes of public security of for the purposes of an administrative or judicial procedure;

(d) where other exceptions to copyright which are traditionally authorized under national law are involved, without prejudice to points (a), (b) and (c).

3. In accordance with the Berne Convention for the protection of Literary and Artistic Works, this Article may not be interpreted in such a way as to allow its application to be used in a manner which unreasonably prejudices the rightholder's legitimate interests or conflicts with normal exploitation of the database.

CHAPTER III

SUI GENERIS RIGHT

Article 7

Object of protection

1. Member States shall provide for a right for the maker of a database which shows that there has been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents to prevent extraction and/or re-utilization of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database.

2. For the purposes of this Chapter:

(a) 'extraction` shall mean the permanent or temporary transfer of all or a substantial part of the contents of a database to another medium by any means or in any form;

(b) 're-utilization` shall mean any form of making available to the public all or a substantial part of the contents of a database by the distribution of copies, by renting, by on-line or other forms of transmission. The first sale of a copy of a database within the Community by the rightholder or with his consent shall exhaust the right to control resale of that copy within the Community;

Public lending is not an act of extraction or re-utilization.

3. The right referred to in paragraph 1 may be transferred, assigned or granted under contractual licence.

4. The right provided for in paragraph 1 shall apply irrespective of the eligibility of that database for protection by copyright or by other rights. Moreover, it shall apply irrespective of eligibility of the contents of that database for protection by copyright or by other rights. Protection of databases under the right provided for in paragraph 1 shall be without prejudice to rights existing in respect of their contents.

5. The repeated and systematic extraction and/or re-utilization of insubstantial parts of the contents of the database implying acts which conflict with a normal exploitation of that database or which unreasonably prejudice the legitimate interests of the maker of the database shall not be permitted.

Article 8

Rights and obligations of lawful users

1. The maker of a database which is made available to the public in whatever manner may not prevent a lawful user of the database from extracting and/or re-utilizing insubstantial parts of its contents, evaluated qualitatively and/or quantitatively, for any purposes whatsoever. Where the lawful user is authorized to extract and/or re-utilize only part of the database, this paragraph shall apply only to that part.

2. A lawful user of a database which is made available to the public in whatever manner may not perform acts which conflict with normal exploitation of the database or unreasonably prejudice the legitimate interests of the maker of the database.

3. A lawful user of a database which is made available to the public in any manner may not cause prejudice to the holder of a copyright or related right in respect of the works or subject matter contained in the database.

Article 9

Exceptions to the sui generis right

Member States may stipulate that lawful users of a database which is made available to the public in whatever manner may, without the authorization of its maker, extract or re-utilize a substantial part of its contents:

(a) in the case of extraction for private purposes of the contents of a non-electronic database;

(b) in the case of extraction for the purposes of illustration for teaching or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose to be achieved;

(c) in the case of extraction and/or re-utilization for the purposes of public security or an administrative or judicial procedure.

Article 10

Term of protection

1. The right provided for in Article 7 shall run from the date of completion of the making of the database. It shall expire fifteen years from the first of January of the year following the date of completion.

2. In the case of a database which is made available to the public in whatever manner before expiry of the period provided for in paragraph 1, the term of protection by that right shall expire fifteen years from the first of January of the year following the date when the database was first made available to the public.

3. Any substantial change, evaluated qualitatively or quantitatively, to the contents of a database, including any substantial change resulting from the accumulation of successive additions, deletions or alterations, which would result in the database being considered to be a substantial new investment, evaluated qualitatively or quantitatively, shall qualify the database resulting from that investment for its own term of protection.

Article 11

Beneficiaries of protection under the sui generis right

1. The right provided for in Article 7 shall apply to database whose makers or rightholders are nationals of a Member States or who have their habitual residence in the territory of the Community.

2. Paragraph 1 shall also apply to companies and firms formed in accordance with the law of a Member States and having their registered office, central administration or principal place of business within the Community; however, where such a company or firm has only its registered office in the territory of the Community, its operations must be genuinely linked on an ongoing basis with the economy of a Member States.

3. Agreements extending the right provided for in Article 7 to databases made in third countries and falling outside the provisions of paragraphs 1 and 2 shall be concluded by the Council acting on a proposal from the Commission. The term of any protection extended to databases by virtue of that procedure shall not exceed that available pursuant to Article 10.

CHAPTER IV

COMMON PROVISIONS

Article 12

Remedies

Member States shall provide appropriate remedies in respect of infringements of the rights provided for in this Directive.

Article 13

Continued application of other legal provisions

This Directive shall be without prejudice to provisions concerning in particular copyright, rights related to copyright or any other rights or obligations subsisting in the data, works or other materials incorporated into a database, patent rights, trade marks, design rights, the protection of national treasures, laws on restrictive practices and unfair competition, trade secrets, security, confidentiality, data protection and privacy, access to public documents, and the law of contract.

Article 14

Application over time

1. Protection pursuant to this Directive as regards copyright shall also be available in respect of databases created prior to the date referred to Article 16 (1) which on that date fulfil the requirements laid down in this Directive as regards copyright protection of databases.

2. Notwithstanding paragraph 1, where a database protected under copyright arrangements in a Member States on the date of publication of this Directive does not fulfil the eligibility criteria for copyright protection laid down in Article 3 (1), this Directive shall not result in any curtailing in that Member States of the remaining term of protection afforded under those arrangements.

3. Protection pursuant to the provisions of this Directive as regards the right provided for in Article 7 shall also be available in respect of databases the making of which was completed not more than fifteen years prior to the date referred to in Article 16 (1) and which on that date fulfil the requirements laid down in Article 7.

4. The protection provided for in paragraphs 1 and 3 shall be without prejudice to any acts concluded and rights acquired before the date referred to in those paragraphs.

5. In the case of a database the making of which was completed not more than fifteen years prior to the date referred to in Article 16 (1), the term of protection by the right provided for in Article 7 shall expire fifteen years from the first of January following that date.

Article 15

Binding nature of certain provisions

Any contractual provision contrary to Articles 6 (1) and 8 shall be null and void.

Article 16

Final provisions

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive before 1 January 1998.

When Member States adopt these provisions, they shall contain a reference to this Directive or shall be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2. Member States shall communicate to the Commission the text of the provisions of domestic law which they adopt in the field governed by this Directive.

3. Not later than at the end of the third year after the date referred to in paragraph 1, and every three years thereafter, the Commission shall submit to the European Parliament, the Council and the Economic and Social Committee a report on the application of this Directive, in which, inter alia, on the basis of specific information supplied by the Member States, it shall examine in particular the application of the sui generis right, including Articles 8 and 9, and shall verify especially whether the application of this right has led to abuse of a dominant position or other interference with free competition which would justify appropriate measures being taken, including the establishment of non-voluntary licensing arrangements. Where necessary, it shall submit proposals for adjustment of this Directive in line with developments in the area of databases.

Article 17

This Directive is addressed to the Member States.

Done at Strasbourg, 11 March 1996.

For the European Parliament

The President

K. HÄNSCHFor the Council

The President

L. DINI

(1) OJ No C 156, 23. 6. 1992, p. 4 and

OJ No C 308, 15. 11. 1993, p. 1.

(2) OJ No C 19, 25. 1. 1993, p. 3.

(3) Opinion of the European Parliament of 23 June 1993 (OJ No C 194, 19. 7. 1993, p. 144), Common Position of the Council of 10 July 1995 (OJ No C 288, 30. 10. 1995, p. 14), Decision of the European Parliament of 14 December 1995 (OJ No C 17, 22 1. 1996) and Council Decision of 26 February 1996.

(4) OJ No L 122, 17. 5. 1991, p. 42. Directive as last amended by Directive 93/98/EEC (OJ No L 290, 24. 11. 1993, p. 9.)

(5) OJ No L 346, 27. 11. 1992, p. 61.

(6) OJ No L 290, 24. 11. 1993, p. 9.

(7) OJ No L 281, 23. 11. 1995, p. 31.

APPENDIX 2

WORLD INTELLECTUAL PROPERTY ORGANIZATION
GENEVA
DIPLOMATIC CONFERENCE ON
CERTAIN COPYRIGHT AND NEIGHBORING RIGHTS
QUESTIONS

Geneva, December 2 to 20, 1996

BASIC PROPOSAL
FOR THE SUBSTANTIVE PROVISIONS OF THE TREATY
ON INTELLECTUAL PROPERTY IN RESPECT OF DATABASES
TO BE CONSIDERED BY THE DIPLOMATIC CONFERENCE
prepared by the Chairman of the Committees of Experts
on a Possible Protocol to the Berne Convention and
on a Possible Instrument for the Protection of the Rights of Performers
and Producers of Phonograms

Draft Treaty
on Intellectual Property
in Respect of Databases

Preamble

The Contracting Parties,
Desiring to enhance and stimulate the production, distribution and international trade in databases,
Recognizing that databases are a vital element in the development of a global information infrastructure and an essential tool for promoting economic, cultural and technological advancement,
Recognizing that the making of databases requires the investment of considerable human, technical and financial resources but that such databases can be copied or accessed at a fraction of the cost needed to design them independently,
Desiring to establish a new form of protection for databases by granting rights adequate to enable the makers of databases to recover the investment they have made in their databases and by providing international protection in a manner as effective and uniform as possible,
Emphasizing that nothing in this Treaty shall derogate from existing obligations that Contracting Parties may have to each other under treaties in the field of intellectual property, and in particular, that nothing in this Treaty shall in any way prejudice the rights granted to authors in the Berne Convention for the Protection of Literary and Artistic Works,
Have agreed as follows:

Article 1
Scope

(1) Contracting Parties shall protect any database that represents a substantial investment in the collection, assembly, verification, organization or presentation of the contents of the database.
(2) The legal protection set forth in this Treaty extends to a database regardless of the form or medium in which the database is embodied, and regardless of whether or not the database is made available to the public.
(3) The protection granted under this Treaty shall be provided irrespective of any protection provided for a database or its contents by copyright or by other rights granted by Contracting Parties in their national legislation.
(4) The protection under this Treaty shall not extend to any computer program as such, including without limitation any computer program used in the manufacture, operation or maintenance of a database.

Article 2
Definitions

For the purposes of this Treaty:
(i) "database" means a collection of independent works, data or other materials arranged in a systematic or methodical way and capable of being individually accessed by electronic or other means;
(ii) "extraction" means the permanent or temporary transfer of all or a substantial part of the contents of a database to another medium by any means or in any form;
(iii) "maker of the database" means the natural or legal person or persons with control and responsibility for the undertaking of a substantial investment in making a database;
(iv) "substantial investment" means any qualitatively or quantitatively significant investment of human, financial, technical or other resources in the collection, assembly, verification, organization or presentation of the contents of the database;
(v) "substantial part", in reference to the contents of a database, means any portion of the database, including an accumulation of small portions, that is of qualitative or quantitative significance to the value of the database;
(vi) "utilization" means the making available to the public of all or a substantial part of the contents of a database by any means, including by the distribution of copies, by renting, or by on-line or other forms of transmission, including making the same available to the public at a place and at a time individually chosen by each member of the public.

Article 3
Rights

(1) The maker of a database eligible for protection under this Treaty shall have the right to authorize or prohibit the extraction or utilization of its contents.
(2) Contracting Parties may, in their national legislation, provide that the right of utilization provided for in paragraph (1) does not apply to distribution of the original or any copy of any database that has been sold or the ownership of which has been otherwise transferred in that Contracting Party's territory by or pursuant to authorization.

Article 4
Rightholders

(1) The rights provided under this Treaty shall be owned by the maker of the database.
(2) The rights provided under this Treaty shall be freely transferable.

Article 5

Exceptions

(1) Contracting Parties may, in their national legislation, provide exceptions to or limitations of the rights provided in this Treaty in certain special cases that do not conflict with the normal exploitation of the database and do not unreasonably prejudice the legitimate interests of the rightholder.

(2) It shall be a matter for the national legislation of Contracting Parties to determine the protection that shall be granted to databases made by governmental entities or their agents or employees.

Article 6

Beneficiaries of Protection

(1) Each Contracting Party shall protect according to the terms of this Treaty makers of databases who are nationals of a Contracting Party.

(2) The provisions of paragraph (1) shall also apply to companies, firms and other legal entities formed in accordance with the laws of a Contracting Party or having their registered office, central administration or principal place of business within a Contracting Party; however, where such a company, firm or other legal entity has only its registered office in the territory of a Contracting Party, its operations must be genuinely linked on an on-going basis with the economy of a Contracting Party.

Article 7

National Treatment and Independence of Protection

(1) The maker of a database shall enjoy in respect of the protection provided for in this Treaty, in Contracting Parties other than the Contracting Party of which he is a national, the rights which their respective laws do now or may hereafter grant to their nationals as well as the rights specially granted by this Treaty.

(2) Protection of a database in the Contracting Party of which the maker of the database is a national shall be governed by national legislation.

(3) The enjoyment and the exercise of rights under this Treaty shall be independent of the existence of protection in the Contracting Party of which the maker of a database is a national. Apart from the provisions of this Treaty, the extent of protection, as well as the means and extent of redress, shall be governed exclusively by the laws of the Contracting Party where protection is claimed.

(4) Makers of databases who are not nationals of a Contracting Party but who have their habitual residence in a Contracting Party shall, for the purposes of this Treaty, be assimilated to nationals of that Contracting Party.

Article 8

Term of Protection

(1) The rights provided for in this Treaty shall attach when a database meets the requirements of Article 1(1) and shall endure for at least

Alternative A: 25

Alternative B: 15

years from the first day of January in the year following the date when the database first met the requirements of Article 1(1).

(2) In the case of a database that is made available to the public, in whatever manner, before the expiry of the period provided for in paragraph (1), the term of protection shall endure for at least

Alternative A: 25

Alternative B: 15
years from the first day of January in the year following the date when the database was first made available to the public.
(3) Any substantial change to the database, evaluated qualitatively or quantitatively, including any substantial change resulting from the accumulation of successive additions, deletions, verifications, modifications in organization or presentation, or other alterations, which constitute a new substantial investment, shall qualify the database resulting from such investment for its own term of protection.

Article 9
Formalities

The enjoyment and exercise of the rights provided for in this Treaty shall not be subject to any formality.

Article 10
Obligations concerning Technological Measures

(1) Contracting Parties shall make unlawful the importation, manufacture or distribution of protection-defeating devices, or the offer or performance of any service having the same effect, by any person knowing or having reasonable grounds to know that the device or service will be used for, or in the course of, the exercise of rights provided under this Treaty that is not authorized by the rightholder or the law.
(2) Contracting Parties shall provide for appropriate and effective remedies against the unlawful acts referred to in paragraph (1).
(3) As used in this Article, "protection-defeating device" means any device, product or component incorporated into a device or product, the primary purpose or primary effect of which is to circumvent any process, treatment, mechanism or system that prevents or inhibits any of the acts covered by the rights under this Treaty.

Article 11
Application in Time

(1) Contracting Parties shall also grant protection pursuant to this Treaty in respect of databases that met the requirements of Article 1(1) at the date of the entry into force of this Treaty for each Contracting Party. The duration of such protection shall be determined by the provisions of Article 8.
(2) The protection provided for in paragraph (1) shall be without prejudice to any acts concluded or rights acquired before the entry into force of this Treaty in each Contracting Party.
(3) A Contracting Party may provide for conditions under which copies of databases which were lawfully made before the date of the entry into force of this Treaty for that Contracting Party may be distributed to the public, provided that such provisions do not allow distribution for a period longer than two years from that date.

Article 12
Relation to Other Legal Provisions

The protection accorded under this Treaty shall be without prejudice to any other rights in, or obligations with respect to, a database or its contents, including laws in respect of copyright, rights related to copyright, patent, trademark, design rights, antitrust or competition, trade secrets, data protection and privacy, access to public documents and the law of contract.

Article 13

Special Provisions on Enforcement of Rights

Alternative A

(1) Special provisions regarding the enforcement of rights are included in the Annex to the Treaty.

(2) The Annex forms an integral part of this Treaty.

Alternative B

Contracting Parties shall ensure that the enforcement procedures specified in Part III, Articles 41 to 61, of the Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods, Annex 1C, of the Marrakesh Agreement Establishing the World Trade Organization, concluded on April 15, 1994 (the "TRIPS Agreement"), are available under their national laws so as to permit effective action against any act of infringement of the rights provided under this Treaty, including expeditious remedies to prevent infringements, and remedies that constitute a deterrent to further infringements. To this end, Contracting Parties shall apply *mutatis mutandis* the provisions of Articles 41 to 61 of the TRIPS Agreement.